# PCSA

# Network Commands Reference Manual

| | | |
|---|---|---|
| DDCMP | LA75 | RT |
| DDIF | LA210 Letterprinter | RX33 |
| DEC | LAN Bridge | ThinWire |
| DECconnect | LJ250 | TK50 |
| DECmate | LJ252 | TOPS-10 |
| DECnet | LN03 | TOPS-20 |
| DECnet-DOS | LN03 Plus | ULTRIX |
| DECnet-VAX | LN03 ScriptPrinter | VAX |
| DECpaint | MicroVAX | VAXcluster |
| DECrouter | PCMAIL | VAXmate |
| DECserver | PCSA | VAX notes |
| DECstation | P/OS | VAXserver |
| DECterm | PrintServer | VMS |
| DECwindows | RD33 | VT |
| DELNI | RD54 | WPS |
| DEMPR | ReGIS | WPS-PLUS |
| DEPCA | RMS | |
| DESTA | RSTS | |
| LA50 | RSX-11 | |

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## HOW TO ORDER ADDITIONAL DOCUMENTATION
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# About This Manual

## Manual Objectives

This manual describes the commands available at the workstation to control the network and services.

## Intended Reader

This manual is intended for advanced PCSA network users. To use this manual, you should:

*   Be familiar with PCSA networking concepts

*   Have some familiarity with the VMS operating system

*   Be familiar with DOS

*   Make sure the PCSA software is installed

*   Read the *Overview*

## Associated Documents

For more information about topics mentioned in this manual, see:

| Subject | Reference |
| --- | --- |
| CONFIG.SYS file | *Installation and Configuration Guide: DECnet PCSA Client for DOS (VMS Media)* |
| DECALIAS.DAT | *DECnet-DOS Network Management Guide* |
| DNP | *DECnet-DOS Network Management Guide* |
| Loading DNP into EMS | *Memory Solutions* |
| DOS commands | *MS-DOS Reference Manual* and *DOS Enhancements* |
| NCP | *DECnet-DOS Network Management Guide* |

| Subject | Reference |
|---|---|
| Controlling access rights | *Server Administration with Commands* |
| Editing STARTNET.BAT | *Installation and Configuration Guide: DECnet PCSA Client for DOS (VMS Media)* |
| Printing | *Guide for New Users* |

# Manual Organization

This manual consists of six chapters and four appendixes. The most commonly used commands are in the beginning chapters; the least commonly used commands are in the ending chapters.

| | |
|---|---|
| Chapter 1 | Introduces the PCSA network commands. |
| Chapter 2 | Describes how to manage network connections with the USE command. |
| Chapter 3 | Describes how to use printer services with the NET PRINT command. |
| Chapter 4 | Describes how to use the LAT Control Program (LATCP) utility. |
| Chapter 5 | Describes how to use the Memory Management (MEMMAN) utility. |
| Chapter 6 | Describes the PCSA network commands in reference format. |
| Chapter 7 | Describes how to use the Broadcast (BCAST) and Receiver (RCV) utilities. |
| Chapter 8 | Describes the commands that start the network in reference format. |
| Appendix A | Explains network messages. |
| Appendix B | Describes the compatibility of MS-DOS and VMS files. |
| Appendix C | Describes the NET START commands. |

# Conventions Used

Follow these conventions while using this manual:

| Convention | Meaning |
| --- | --- |
| Ctrl/C | While you hold down the Ctrl key, press the C key. |
| Ctrl/Alt/Del | While you hold down the Ctrl and Alt keys, press the Del key. |
| Esc X | Press the Esc key and release it. Then press the next key indicated, and release it. |
| / | A forward slash ( / ) indicates that a command qualifier follows. |
| [ ] | Square brackets in a command line indicate the optional command qualifiers. Do not type the brackets when entering information enclosed in the brackets. |
| vertical list of options | A vertical list of options without square brackets ( [ ] ) indicates that you can specify any number of options or in some cases, none, if the defaults apply. |
| Ctrl/C | While you hold down the Ctrl key, press the C key. |
| Ctrl/Alt/Del | While you hold down the Ctrl and Alt keys, press the Del key. |
| Esc X | Press the Esc key and release it. Then press the next key indicated, and release it. |
| Return | Press the Return or Enter key on your keyboard. |
| I | A vertical bar ( I ) in a command line indicates that you have a choice between two or more entries. You must select one entry unless the entries are optional. |
| . . . | An ellipsis following an entry in a command line indicates that the entry can be repeated any number of times. An ellipsis following a file name indicates that additional parameters, values, or information can be entered. |
| . . . | A vertical ellipsis means that not all the data is shown that the system would display in response to the command, or that not all the data is shown that a user would enter. |
| black type | In examples of dialog between you and the PC workstation, what the workstation displays on the screen is printed in black. |
| red type | In examples of dialog between you and the PC workstation, red type indicates information that you must enter from the keyboard. For online versions, user input is shown in **bold**. |

| Convention | Meaning |
|---|---|
| case | You can enter commands and parameters in uppercase or lowercase letters, or in a combination of both. |
| enter | Enter all letters, spaces, and punctuation marks exactly as they are printed. Then press the Return or Enter key, as appropriate. |
| key labels | On the Digital LK250 keyboard, the keys on the two keypads on the right of the keyboard are referred to by their blue labels. |
| numbers | All numbers shown in this manual are in decimal form, unless otherwise noted. |
| two-line commands | Some commands are continued on a second line. In VMS, a continued command may be indicated by a hyphen (-) at the end of the first line. Enter the hyphen, and press Return. The system displays the _$ prompt. Continue entering the text that follows the _$ prompt in your manual. |
| | In DOS, no hyphen is displayed at the end of the first line. Continue entering text without pressing the Return key. |
| NOTE | Contains information of special importance. |
| CAUTION | Contains information to prevent damage to equipment or software. |
| WARNING | Contains information essential to the safety of personnel. |

# 1

# Introduction to PCSA Network Commands

This manual explains the commands you can use to:

- Connect to services
- Create, maintain, and use services
- Specify a non-DECnet node as a preferred service
- Manage memory
- Send, receive and read Broadcast messages
- Start the network, if necessary

The commands for creating, maintaining, and using services on the PCSA network eliminate the need for you to call your system administrator, because you can perform these operations from your workstation.

The following sections contain information about:

- The PCSA network
- Access rights for a node
- Service security
- PCSA network commands
- Conventions for using network commands
- Using PCSA commands that prompt

## Information About the PCSA Network

A workstation connected to a server on a PCSA network is called a *client*. Through the network, the client accesses and controls services offered on a server. A *service* is a function that is available on the network to a client.

The PCSA network offers clients file services, printer services, virtual disk services, and terminal services.

- File services

  A file service gives you access to files and directories on a server. When you use a file service to access a directory from your workstation, each file in the directory looks like a DOS file. You can access files on file services directly from both DOS and VMS.

  A file server can use byte range locking, which lets several users write to a file simultaneously. Byte range locking ensures that the contents of a file are protected from corruption when multiple users simultaneously access a file.

- Printer services

  Printer services let you connect to and use printers connected to a VMS server.

- Virtual disk services

  A virtual disk service gives multiple users fast access to read-only files, or gives one user fast access to read-write files. For example, if you use a disk service to store an application, multiple users can access the application quickly. Use a disk service for system software that is read-only. A workstation using disk services must be connected to the disk server on a LAN that uses Ethernet. You cannot access files on disk services directly from VMS.

- Terminal services

  A terminal service enables your workstation to connect to a host and act like a terminal.

## Setting Default Access Control Information

It is important to use your user name and password each time you connect to a server. You can do this manually for every connection, or you can avoid this repetitive task by using the following NCP DEFINE NODE command:

```
NCP DEFINE NODE server USER username PASSWORD password MS
```

For example:

```
NCP DEFINE NODE LETTER USER SMITH PASSWORD GRANNY MS
```

This example assumes that the server node has already been defined with the NCP DEFINE NODE command or the PCSA NET DEFINE command. If you need to define your node, see Chapter 6, Other PCSA Network Commands.

From information entered with DEFINE NODE, NCP creates a DECALIAS.DAT file in the default DECNET directory. Once your user name and password for a specific server are in the DECALIAS.DAT file, they are used automatically every time you connect to that server. Passwords are stored in encrypted format.

# Controlling Access Rights

Access control rights are a mechanism used by your system administrator to control access to services and files. Two types of access control to accounts are available on PCSA networks:

- Access controlled by the user at the client

- Access controlled only by the system administrator, or by individuals with system privileges

## Access Controlled by the User

At your workstation, you can restrict access to your account by setting your password using the NET PASSWORD command.

You can also create a virtual disk and specify restrictions on how it is used. To restrict usage, use the NET ATTRIB, NET CREATE, NET MOUNT, NET DISMOUNT, and NET MODIFY commands. You will find detailed information on these commands in Chapter 6, Other PCSA Network Commands.

### Access Controlled by the System Administrator

The system administrator has control of access rights for all users and can override individual access control, if necessary.

## Introduction to PCSA Network Commands

The PCSA network provides commands and utilities you can use to perform various tasks. Table 1–1 lists these commands and utilities and describes their function.

**Table 1–1   PCSA Commands and Utilities**

| Command | Function |
|---|---|
| USE | Connects to file, print, or virtual disk services |
| LOGIN | Connects a workstation to a personal service and runs the user's AUTOUSER.BAT file |
| NET commands | Create, manage, and use services. |
| PERMIT | Offers a single session, single connection file server |
| BCAST | Sends Broadcast messages to workstations on a LAN |
| RCV | Reads Broadcast messages |
| Startup commands | Start the network |

You can use the network commands and utilities to accomplish specific tasks:

- Creating a virtual disk
- Connecting to a service
- Printing on a network
- Displaying services
- Using file services
- Using virtual disk services
- Checking software component availability

Each of these tasks is described in the remaining subsections.

## Creating a Virtual Disk

If you intend to use a virtual disk, you must create it first on the server or using the NET CREATE command. With this command, you:

- Create a virtual disk (in a range of sizes)

- Format a virtual disk

- Establish the virtual disk's location and file name

For more information about the NET CREATE command, see Chapter 6, Other PCSA Network Commands.

## Connecting to a Service

After mounting a disk service, you can connect to it, that is, connect a logical device to the service. You make this connection with the USE command. USE connects to all types of services, disk, file, and printer services. For example, to use a remote printer, you must first connect to the printer with the USE command. For more information about the USE command, see Chapter 2, Managing Network Connections with the USE Utility.

## Printing on a Network

Once you have connected to a printer service with the USE command, you can print on a remote printer by using the NET PRINT command. For more information about the NET PRINT command, see Chapter 3.

## Displaying Services

Usually, services that you need to connect to are available on the server. The difficulty is identifying the services. With the NET DISK SERVICES and NET FILE SERVICES commands you can obtain a complete listing.

- The NET DISK SERVICES command displays the disk services on a server. It can also give you additional information, such as whether a password is required, how many simultaneous connections are allowed, and how many connections have already been made.

- The NET FILE SERVICES command displays the file and printer services offered on a server. Specifically, this command displays the user name, alias name, service name, the access for the service, and the RMS protection.

For more information about these commands, see Chapter 6, Other PCSA Network Commands.

## Using File Services

The NET FILE SERVICES command is just one of the commands you can use to control and access file services. The complete list of file service commands is as follows:

NET ATTRIB
NET CONTINUE
NET FILE SERVICES
NET PASSWORD
NET PAUSE
NET PRINT
USE
PERMIT

For more information about the NET commands for file services and the PERMIT command, see Chapter 6, Other PCSA Network Commands. For more information about the USE command, see Chapter 2, Managing Network Connections with the USE Utility.

## Using Virtual Disk Services

There are other commands you can use to control and access virtual disk services. The complete list of virtual disk commands is as follows:

NET CREATE
NET DELETE
NET DISK SERVICES
NET DISMOUNT
NET ERROR
NET MODIFY
NET MOUNT
USE

For more information about the NET commands for virtual disk services, see Chapter 6, Other PCSA Network Commands. For more information about the USE command, see Chapter 2, Managing Network Connections with the USE Utility.

## Checking Software Component Availability

Use the USE /STATUS command to determine whether all the software components are installed. For example, to make sure the redirector is installed, enter:

USE /STATUS

For more information about the USE command, see Chapter 2, Managing Network Connections with the USE Utility. You can start the redirector by using the REDIR command; you can start the virtual disk service by using the LAD command. For more information about commands to start the network, see Chapter 8, Commands for Starting the PCSA Network.

# Conventions for Using PCSA Network Commands

The following sections contain information about:

- Specifying commands and qualifiers

- Specifying DECnet node names and addresses

- Specifying a VMS user name

Follow these conventions when using the PCSA network commands.

## Specifying Commands and Qualifiers

To specify a PCSA network command or qualifier, you can enter the entire command or qualifier on the command line. Or, you can abbreviate the qualifier by typing the minimum number of unique letters. For example, you can enter /CHA for the /CHARACTERISTICS qualifier for the NET PRINT command.

## Specifying DECnet Node Names and Addresses

Many commands require you to specify a DECnet node name and address. The DECnet node name is a one- to six-character name. At least one character must be alphabetic. For example, A12345 is a valid DECnet node name.

When you specify a node name on a command line, enter two backslashes ( \ \ ) before the node name. For example, to specify the node STAR, enter:

`\ \ STAR`

The command formats for the PCSA network commands display the two backslashes when they are required.

The DECnet address is a decimal string unique for each node. The decimal string is made up of an area number between 1 and 63 followed by a period, then a node number, which is a number between 1 and 1023. For example, 59.972 is a valid DECnet node address.

## Specifying a VMS User Name

When you specify a VMS user name on a command line, enter a percent sign ( % ) before the user name. For example, to specify the user name JONES, enter:

%JONES

# Using PCSA Network Commands That Prompt

Some commands that access virtual disk and file services have several prompting features that make them easy to use.

The first feature is the /QUERY qualifier. When you specify /QUERY, you are prompted for all the qualifiers. To enter a default value in response to a prompt, press the Return key. Use /QUERY to make sure you enter all the necessary information.

The second feature is that you are prompted for all the required information. Optional qualifiers assume default values.

The following commands, with the /QUERY qualifier, prompt you for required information:

> NET ATTRIB
> NET CREATE
> NET DELETE
> NET DISMOUNT
> NET MODIFY
> NET MOUNT
> NET PASSWORD

For more information about these commands, see Chapter 6, Other PCSA Network Commands.

# 2

# Managing Network Connections with the USE Utility

The PCSA USE command (USE) provides functions for managing client network connections. It allows you to connect, disconnect, and obtain status information on active connections to file, print, or disk services. For example, with the USE command, you can save network connections and restore them later.

The following sections discuss:

- Command line syntax

- Access control information

- The USE command

## The USE Command Line Syntax

The USE command has the following syntax:

```
USE [parameters] [/qualifiers] [/modifying qualifiers]
```

Where:

| | |
|---|---|
| USE | Is the USE command |
| Parameters | Are specific items of information, such as device name, node name, service name, user name, password, or file name. Table 2–1 lists all available parameters. |
| Qualifier | Determines the action the USE command performs. Table 2–2 lists all available qualifiers. |
| Modifying qualifier | Modifies the action the USE command performs. Table 2–3 lists all available modifying qualifiers. |

If you forget the syntax for the USE command, the command prompts you for missing information. In the following example, the USE command prompts for the device name, service name and password:

```
USE /CONNECT /VIRTUAL
Device: G:
Service: VXSYS
Password:
```

The following sections contain specific information about the following:

- Implied requests
- Qualifier conventions
- Specifying devices

Table 2–1 contains the parameters you can use with the USE command.

**Table 2–1   Parameters You Can Use with the USE Command**

| Parameter | Identifier | Maximum Length | Examples |
|---|---|---|---|
| Dev: | Terminated with a colon | 5 characters | LPT1:, D:, PRN:, ?:, *: |
| Node | Prefixed with double backslash | 15 characters | \\SUPERA |
| Service | Prefixed with single backslash | 31 characters | \VXSYS, \WORK:[JONES] |
| Username | Prefixed with percent sign | 12 characters | %JONES, %SMITH |
| Password | Separated with spaces | 31 characters | XYZZY, SYZYGY, * |
| Filename | Prefixed with at sign (@) | 64 characters | @C:\DECNET\USE.INI |

If you use the USE command in a batch file, enter two percent signs ( %% ) in front of the user name.

**NOTE**
You must specify each parameter as it is described in the preceding table. If you omit a required identifier for a parameter, such as a colon at the end of a device name, USE may misinterpret the parameter.

**Table 2–2   Qualifiers**

| Qualifier | Description |
| --- | --- |
| /CHECK | Checks a device for error status and returns an appropriate error message and error level |
| /CLICK | Turns on audible clicking of virtual disks |
| /CONNECT | Connects a workstation device to a file, print, or disk service |
| /DISCONNECT | Cancels a network connection to a file, print, or disk service |
| /FIXUP | Modifies DOS so that unconnected virtual drives are treated as invalid |
| /HELP | Displays information about commands and qualifiers |
| /LIST | Lists network (file, print, and disk services) and local (joined and substituted) connections |
| /NOCLICK | Turns off clicking of virtual disks |
| /REPLACE | Replaces part or all of a connection, or reconnects an existing connection |
| /RESTORE | Restores network connections from a saved context file |
| /SAVE | Creates a context file of the current network connections |
| /SETDIR | Changes the VMS directory associated with an existing file service connection |
| /SHOW | Displays information on disk or file services available |
| /STATUS | Displays installed network components and client node information |

**Table 2–3   Modifying Qualifiers**

| Qualifier | Description |
| --- | --- |
| /BRIEF | Displays limited information; this is the default. |
| /ENVIRON | Used with the ambiguous device to specify an environment variable to receive a drive letter. |
| /EXCEPT | Used with the wildcard device to exclude a drive, or drives, from the requested action. |
| /FAST | Virtual disk connection should be in fast mode (default for RW services). |
| /FULL | Displays full or extended information, if applicable. |

**Table 2–3 (Cont.)   Modifying Qualifiers**

| Qualifier | Description |
|-----------|-------------|
| /LOG | Displays information about the function being performed or completed. |
| /NETWORK | Interprets service type as a network file or print service. |
| /NOLOG | Does not display what is being done. /NOLOG is the default for all operations except connections you make using the ambiguous device name. |
| /RO | Virtual disk connection should be to a read-only service. |
| /RW | Virtual disk connection should be to a read/write service. |
| /SLOW | Virtual disk connection should be in slow mode. |
| /VIRTUAL | Interprets service type as a virtual disk service. |
| /X | Substitutes the hardware Ethernet address for a service name in a request. |

## Implied Request Types

An implied request is a command line that contains the USE command, with or without specific parameters, and no qualifiers. Table 2–4 contains the parameters for determining implied requests.

**Table 2–4   Parameters for Implied Requests**

| Parameters | Implied Request | Examples |
|------------|-----------------|----------|
| Device name and node, service, or user name | Connect to virtual disk service | USE D: VXSYS |
| None | Display active connections | USE |
| Node or service name | Display service information | USE \\ KGB, USE VXSYS |
| Device name | Reconnect Existing Device | USE D: |
| File name of an existing file | Restore network context | USE @OLD.CMD |
| File name of a new file | Save network context | USE @NEW.CMD |

## Qualifier Conventions

The conventions for qualifiers are:

- All qualifiers begin with the slash (/) and must be separated from the next part of the command by either a parameter prefix, such as \\, \, %, @, or a space. In the following example, the user name is separated from the qualifier by the percent sign:

  `USE \\STAR /SHOW /NETWORK%LORD`

- You can assign a value to some qualifiers. Attach the value with an equal sign or a colon immediately following the qualifier name. For example, /EXCEPT=drive.

When specifying a qualifier, use enough letters to uniquely identify the qualifier. If you do not use enough letters, you will get an error message. The only qualifier that can be represented by a single letter is /R (/REPLACE).

Table 2–5 lists all qualifiers and the required and optional parameters needed to complete the command.

**Table 2–5    Required and Optional Parameters for Qualifiers**

| Qualifier | Required Parameters | Optional Parameters |
|---|---|---|
| /CHECK | Device | None |
| /CLICK | None | None |
| /CONNECT | Device, Service | Node, User name, Password |
| /DISCONNECT | Device | None |
| /FIXUP | None | None |
| /HELP | None | None |
| /LIST | None | Device |
| /NOCLICK | None | None |
| /REPLACE | Device | Node, Service, User name, Password |
| /RESTORE | Filename | None |
| /SAVE | Filename | None |

**Table 2–5 (Cont.)   Required and Optional Parameters for Qualifiers**

| Qualifier | Required Parameters | Optional Parameters |
|-----------|---------------------|---------------------|
| /SETDIR   | Device, Service     | None                |
| /SHOW     | Node or Service     | Service, User name, Password |
| /STATUS   | None                | None                |

## Specifying Devices

The most common use for the USE command is to connect to a service from a workstation. USE connects a logical device to a disk, file, or printer service.

You must specify a device name, such as D, and a service name, such as \VXSYS. Unless overridden by one of the service type qualifiers (/NETWORK or /VIRTUAL), the service type is determined by the following rules:

- If the command line includes a node name, the service type defaults to a file or print service, depending on the device type.

- If the command line does not include a node name, and the device being connected is a valid virtual drive, the service type defaults to a disk service.

When specifying a device name, you can specify a logical device, such as drive X, an ambiguous device ( ?: ), or a wildcard device ( *: ).

Both ambiguous and wildcard device names are discussed in the following sections.

### Ambiguous Device Name

You can use the ambiguous device name only when establishing drive connections. When using the ambiguous device name, use the service type qualifiers /NETWORK and /VIRTUAL.

When you make a connection using the ambiguous device name ( ?: ), the USE command automatically uses the next available drive appropriate for the service type. For example, if the next available drive for a disk service is drive F, the following command connects drive F to the disk service \VXSYS, which is on the server STAR:

```
USE ?: \\STAR\VXSYS /VIRTUAL
```

After making a successful connection with the ambiguous device name, USE displays the drive used and the connection made. You can stop this display by using the /NOLOG qualifier.

The ambiguous device name is useful in a startup batch file when you want to connect to a service but are unsure of the drive available for the connection. The USE command can store the drive used in the connection in an *environment variable* using the /ENVIRON qualifier. An environment variable is a variable in the command processor's environment. You can set or display environment variables by using the DOS SET command. For more information about environment variables and the DOS SET command, see the *MS-DOS Reference Manual*.

The /ENVIRON qualifier accepts the name of the environment variable as a value. There must be enough space in the environment for the USE command to create the variable. You can use this variable later in a batch file.

For example, you can use the /ENVIRON qualifier in a startup batch file when the first virtual disk drive is unknown. The following lines connect to a system service:

```
USE ?: PCSA$DOS_SYSTEM/VIRTUAL/ENVIRON=drive
IF ERRORLEVEL 1 GOTO NOSYS
SUBST L: %drive%\
SET PATH=%drive%\DECNET;%drive%\VXSYS;%drive%\PCAPP
GOTO DONE
:NOSYS
ECHO COULD NOT CONNECT TO SYSTEM SERVICE
:DONE
```

In this example, the first line of the startup file connects the next available drive to a virtual disk system service. The drive used in the connection, if successful, is placed in the environment variable "drive." The drive is connected and the variable is set. The drive is used to create the path and a substituted drive that points to "drive." Thus, the startup file does not need fixed drive letters in it. USE can make all connections based on the configuration of the workstation.

If you later add a RAM disk, which is a memory drive in random access memory, or change the number of partitions on your hard disk, your startup file still makes the proper connections. The startup file for a workstation on the PCSA network is STARTNET.BAT.

When used with the /ENVIRON qualifier, the ambiguous device name allows you to use the same startup file on different workstations with different configurations, as long as the network is running or the workstation is booted remotely.

## Wildcard Device Name

Using the wildcard device name ( *: ), you can use a single command
to affect all devices. For example, to check the device status of all the
devices to which you are connected, enter:

```
USE *: /CHECK
Device E: is ok
Device F: is ok
Device M: is ok
Device N: is ok
```

You can also use the wildcard device name with the /NETWORK qualifier
to affect only file and printer services, and with the /VIRTUAL qualifier
to affect only disk services. For example, to check the device status of
devices connected to file and printer services, enter:

```
USE *: /CHECK /NETWORK
Device M: is ok
Device N: is ok
```

To check the device status of devices connected to disk services, enter:

```
USE *: /CHECK /VIRTUAL
Device E: is ok
Device F: is ok
```

The default is to process all devices.

The wildcard device name is valid for the following request types:

- Check (/CHECK)

- Disconnect (/DISCONNECT)

- List (/LIST)

- Replace (/REPLACE)

If an error occurs during the processing of a wildcard device, USE displays
a warning with the text of the error and continues. If you specify the
/FULL qualifier and an error occurs during the processing of a wildcard
device, USE displays the error and pauses. You can then press any key to
continue, or Ctrl/Break to stop.

When using the wildcard device name, you can exclude certain drives from
the wildcard operation by using the /EXCEPT qualifier. For example, to
exclude drive F from the following USE /DISCONNECT command, enter:

```
USE *: /DISCONNECT /EXCEPT=F
```

# How USE Determines Access Control Information

Access control information limits and controls who can use a service. Default access control information consists of a user name and password. This information is included in the database DECALIAS.DAT for each defined node; you create it by using the NCP DEFINE NODE command.

The USE command uses default access control information when you do not specify access information; in other words, when you omit a user name or a password, or both, on the command line.

The following rules determine access control information:

- If you supply a user name and password on the command line, the USE command uses only the access information provided and does not check DECALIAS.DAT.

- If you supply a user name without a password, USE checks DECALIAS.DAT for the node being accessed. If there is a user name for the node that matches the user name supplied, the access control information for the node is used.

- If you supply a user name that does not match the user name in DECALIAS.DAT, the USE command prompts you for the password.

- If you omit both a user name and a password, the USE command checks DECALIAS.DAT for access control information for the node being connected. If USE finds access control information, it uses the access control information automatically.

- If there is no access control information for the node in DECALIAS.DAT, USE checks for access control information for the **local node name**. If USE finds access control information, it uses the access control information.

- If there is no access control information specified in the command or in DECALIAS.DAT, access to the service is determined by the default file server access that is set by the system administrator.

The USE command uses access control information only when you use file and printer services or the /SHOW qualifier on a server. If you specify a *null user name*, which is a percent sign followed by a space, USE ignores the information in DECALIAS.DAT. The connection is made by means of the default PCFS account on the server, generally PCFS$ACCOUNT. For example:

```
USE ?: \\MUSIC\PCCOMMON%
```

You can use the single asterisk ( * ) in place of a password to force USE to prompt you for the password. The password is not displayed as you type it. If you connect to a file service and omit a user name, USE prompts you for a user name before it prompts you for a password.

You can also use the asterisk prompt feature with DECnet-DOS; that is, you can use NCP to define access control information and set the password to an asterisk. Every time you connect to a node and omit access information, the stored asterisk forces USE to prompt you for a password, but not a user name.

## USE Command

The description of the USE command is divided into the following
sections:

- Connecting to a virtual disk service
- Connecting to a file or printer service
- Displaying active connections
- Disconnecting from a service
- Reconnecting and replacing a connection
- Saving the connection context
- Restoring the connection context
- Checking device status
- Displaying information about file and print services
- Displaying information about virtual disk services
- Displaying installed components and client information
- Changing the VMS directory of a connection
- Controlling click of virtual disks
- Modifying the MS-DOS status of unconnected virtual disk drives
- Displaying information about action performed
- Effect of modifying qualifiers

## Connecting to a Virtual Disk Service

To connect a drive to a virtual disk service, use the USE command with
the /VIRTUAL qualifier. You must mount the virtual disk service with the
NET MOUNT command before you can connect to it. Once connected, the
drive is displayed as a virtual drive.

When you connect to a service, the access granted is the access defined
when the service was mounted with the NET MOUNT command. You
can also limit the number of users who can access a virtual disk service
with the NET MOUNT command. For more information about the NET
MOUNT command, see Chapter 6, Other PCSA Network Commands.
If you try to connect to the service after the limit is reached, an error
message is displayed.

To ensure security when connecting to a disk service, use a node name
and password.

### Format

USE   *dev: [\\node\]service [password | *] /VIRTUAL*

### Parameters

*dev:*
Is a logical device name. A device must be a letter, such as E, which
designates a drive. The device must be followed by a colon.

*node*
Is the DECnet node name. If you do not specify a node, the USE
command determines the server on which the virtual disk is located
by choosing the service with the highest rating. For more information
about service ratings, see Chapter 6, Other PCSA Network Commands.
Because more than one virtual disk of the same name can exist, specify a
node to ensure that you are connecting to the correct virtual disk.

*service*
Is the name of the virtual disk service.

*password*
Is the password associated with the disk service you specified.

\*

Prompts you for a password. When you enter the password, it is not
displayed on the screen.

## Qualifiers

### /VIRTUAL

Is a modifying qualifier that connects to a virtual disk service. The
default is to connect to a file service if you use a node name and connect
to a disk service if you use only a service name.

## Description

When connecting to a virtual disk service, make sure the drive letters can
be used for virtual disks. The drives available for virtual disk services
are displayed when you start your workstation or when you use the USE
command to list network services. If you use a drive other than the ones
available for virtual disk services, you receive an error message.

## Examples

1. `USE E: \\STAR\MYDISK /VIRTUAL /LOG`
   `Device E: connected to \\STAR\MYDISK`

This example connects drive E to the virtual disk MYDISK on node STAR
and displays information about the connection.

If MYDISK was mounted with the /RW qualifier, read and write access to
the service is granted. If MYDISK was mounted with the /RO qualifier,
read-only access is granted.

2. `USE E: \\STAR\MYDISK ASTEROID /VIRTUAL`

This example connects drive E to the virtual disk MYDISK on node STAR
and specifies the password ASTEROID.

3. `USE E: \\STAR\MYDISK * /VIRTUAL`
   `Password:`

This example connects drive E to the virtual disk MYDISK on node STAR
and prompts you for the password.

4. `USE E: MYDISK ASTEROID /VIRTUAL`

This example connects drive E to the virtual disk MYDISK without
specifying a node. The password is ASTEROID. The node chosen depends
on the nodes that respond to the USE command and to the service ratings
of the appropriate services on the nodes.

5. `USE ?: VXSYS`
   `Device H: connected to \\LISTER\VXSYS`

This example uses the ambiguous device to connect to the virtual disk you
specify.

When you use the ambiguous device name and specify the service name,
the next available virtual disk drive (in this case drive H) is connected to
the service.

6. `USE E: /X`
   `Device E: connected to \\KGB\XX-XX-XX-XX-XX-XX`

You can connect a drive to a service whose name is the Ethernet address
of your workstation. This example uses the /X qualifier to configure your
workstation for remote boot, so you do not have to enter the Ethernet
address for the service name.

7. `USE E: * /VIRTUAL`
   `Password:`

If there was an error in the connection to drive E, this example reconnects
to drive E.

**NOTE**
The status of a drive with a faulty connection displays as Error when you
run the USE command to display the status of connections.

## Connecting to a File or Printer Service

To connect to a file or printer service, use the USE command. You must specify a server name when connecting to a file or printer service.

You can also use this command to connect to any directory on a server, even if it is not offered as a service.

Access to a file service is limited to a certain number of users. If you attempt to connect after the limit has been reached, an error message is displayed.

**NOTE**
If you try to connect to a file or printer service, and are continually refused connection, see your system administrator.

## Format

USE   *dev: \\node\service[%username] [password | *]*

## Parameters

*dev:*
Is a logical device name. A device can be a letter that designates a drive or a logical device name for a printer, such as LPT1, LPT2, or LPT3. The device must be followed by a colon.

*node*
Is the DECnet node name of the server where the file service is stored. The node is required when you are connecting to a file or print service.

*service*
Is the name of the file service, printer service, or print queue to which you are connecting. The service you specify must be the same as the service assigned by the system administrator (using the PCSA GRANT command), or the name of an entry in the UAF or VMS print queue.

### username

Is the user name for the VMS account that you are using. If you omit
a user name, and specify an asterisk ( * ) for the password, you are
prompted for a user name and password. At the prompt, if your user
name is the same as the service, press the Enter key. Only enter a user
name at the prompt if the user name is different than the service. The
user name determines the type of access and whether access to the service
you specified is permitted.

Using both service and user name means the service rights are
determined by the rights of user name.

### password

Is the password associated with the user name that you specified.

*

Prompts you for a user name (if not specified), and a password. When you
enter the password, it is not displayed on the screen.

## Examples

1. `USE M: \\STAR\MYSERVICE%%USER1 *`
   `Password:`

This example (in a batch file) uses drive M for the service MYSERVICE
on node STAR and user name USER1 and prompts for USER1's password.

2. `USE N: \\STAR\MYSERVICE`

This example connects device N to the service MYSERVICE on node
STAR.

If MYSERVICE is defined in the file service database (PCFS$SERVICE_
DATABASE:PCFS$SERVICE_DATABASE.DAT) on the file server, the
default account PCFS$ACCOUNT, or a renamed account, is used to
determine access to the service, unless you have default access control
information defined.

If MYSERVICE is an entry in the UAF, MYSERVICE does not have a
password. If MYSERVICE has a password, the USE command displays
an error.

3. `USE Z: \\STAR\COMMON *`
   `Username:`
   `Password:`

This example connects device Z to the service COMMON on node STAR, and prompts you for a user name and password.

4. `USE L: \\STAR\USER1%USER2 password`

You can connect to the directory for USER1 on node STAR by specifying your user name and password. You are granted access to the USER1 account according to the rights of your user identification code (UIC), which is set up by your system administrator. This example connects USER2 to the account for USER1 on node STAR.

USER1 is a service name and USER2 must be a VMS user name. The password you specify is the password of USER2.

5. `USE L: \\STAR\MYSERVICE%USER1 *`
   `Password:`

This example connects to the service MYSERVICE on which access is granted to USER1, and prompts you for a password.

6. `USE X: \\STAR\PCCOMMON%`

This example connects to the service PCCOMMON on node STAR. Because the null username was specified, the USE command ignores the default access control information in the DECALIAS.DAT file.

7. `USE X: \\BUBBLE\ABC:[ENG.DOS.V33] /LOG`
   `Device X: connected to \\BUBBLE\ABC:[ENG.DOS.V33]`

This example connects drive X to the directory \ABC:[ENG.DOS.V33] on the server BUBBLE, even if it is not offered as a service.

8. `USE X: \\STAR\DVL:[V11.TEST]`

This example connects logical drive X to the VMS directory V11.TEST, which is on disk DVL.

# Displaying Active Connections

To display information about active connections to virtual disks and
file and print services, use the USE command with the /FULL, /LIST,
/NETWORK, and /VIRTUAL qualifiers. You can request displays of
all network connections, only virtual disk services, only file and print
services, or only one device.

## Format

USE   *[dev:] [/FULL] [/LIST] [/NETWORK] [/VIRTUAL]*

## Parameters

*dev:*
Is a logical device name. A device can be a letter, such as E, which
designates a drive or a logical device name for a printer, such as LPT1,
LPT2, or LPT3. The device must be followed by a colon.

## Qualifiers

*/FULL*
Is a modifying qualifier that displays complete information about network
connections, including the drive size for all drives and the VMS directory
for all file service connections. The default is to display size only for
virtual drives and display VMS directories only if they were explicitly set.

*/LIST*
Is a qualifier that displays information about a single device. Use the
/LIST qualifier to distinguish your display request from a reconnect
request.

*/NETWORK*
Is a modifying qualifier that displays connections to file and print services.

*/VIRTUAL*
Is a modifying qualifier that displays connections to virtual disk services.

## Description

Devices that have multiple connections, such as a virtual drive that has been redirected, are listed twice. The status column contains information about how the device is being used.

## Example

```
USE/FULL
USE Version 3.0  PCSA Network Connection Manager [Virtual drives
                                                          H:-O:]

Status Dev   Type   Connection Name                     Mode  Size
------ ---   ----   ------------------------------      ----  ------
       B:    SUBST  C:\                                        27 MB
JOINED H:    DISK   \\LISTER\VXSYS                      RO     10 MB
       H:    JOIN   C:\DEV                                     10 MB
SUBST  J:    DISK   \\LOADER\TOOL_BOX                   RO     32 MB
       J:    SUBST  C:\TMP                                     27 MB
REDIR  K:    DISK   \\LOADER\TOOL_BOX                   RO     32 MB
       K:    FILE   \\LISTER\PCCOMMON                          435 MB
                    SERVER:[PCSA.PCCOMMON]
       LPT1  PRINT  \\FOWL\LN03R_PS%WARD
```

This example displays information about connections to the virtual disks and file servers.

Table 2-6 contains information about the display.

### Table 2-6   Display Connection Information

| Field | Description | |
|-------|-------------|---|
| Status | The status of the connection | |
| | Joined | The device has been joined with the DOS JOIN command. |
| | Subst | The device has been substituted with the DOS SUBST command. |
| | Redir | The device is redirected. |
| | Paused | The connections to the device are suspended. For more information, see the NET PAUSE command. |
| | Error | There is an error in the connection to the device. |
| | If the status column is blank, the connection to the drive is normal. | |

**Table 2–6 (Cont.)   Display Connection Information**

| Field | Description |
|---|---|
| Dev | DOS device name connected to the service |
| Type | The type of service or local connection |
| | The type can be DISK, FILE, PRINT, SUBST, or JOIN |
| Connection Name | The remote server and service or the local connection name |
| Mode | The service access mode |
| | The mode can be RO, RW, FAST, or SLOW |
| Size | The size of the connected service; valid for drives only |

# Disconnecting from a Service

To disconnect a workstation from a virtual disk or a file service, use the
USE command with the /DISCONNECT qualifier.

You cannot disconnect from a paused file service or from the current drive.

## Format

USE   *dev: /DISCONNECT*

## Parameters

*dev:*
Is a logical device name. A device can be a letter, such as E, which
designates a drive or a logical device name for a printer, such as LPT1,
LPT2, or LPT3. The device must be followed by a colon.

## Qualifiers

*/DISCONNECT*
Is a qualifier that disconnects the specified device.

## Examples

1. `USE E: /DISCONNECT`

This example disconnects the virtual disk from drive E.

2. `USE *: /DISCONNECT`

This example disconnects all devices.

## Reconnecting and Replacing a Connection

To reconnect a device or replace an existing connection to a virtual disk or a file or print service, use the USE command with the /REPLACE qualifier.

## Format

USE   *dev: [\\node][\service][%username] [password | *]*
      */REPLACE*

## Parameters

*dev:*
Is a logical device name. A device can be a letter, such as D, which designates a drive or a logical device name for a printer, such as LPT1, LPT2, or LPT3. The device must be followed by a colon.

*node*
Is the DECnet node name of the server offering the service.

*service*
Is the name of the file service, printer service, or virtual disk service you are replacing.

*username*
Is the user name for the VMS account that you are using if the service is a file or printer service.

*password*
Is the password associated with the user name (if a user name is specified).

*
Prompts you for a user name (if not specified), and a password. When you enter the password, it is not displayed on the screen.

## Qualifiers

### /REPLACE
Is a qualifier that disconnects a drive and reconnects to the same drive in one command. Use /REPLACE to reconnect a faulty connection.

## Description

If the connection contains a user name (manually specified or found in DECALIAS.DAT), the user name is appended to the current connection information and USE compares the user name with the access control information in DECALIAS.DAT. If they are the same, no password prompt is displayed. If the user name does not match the access control information, the password prompt is displayed.

## Examples

1. `USE D: \\STAR\PCAPP /REPLACE`

This example disconnects drive D and reconnects it to the file service PCAPP on node STAR.

2. `USE D: \\MOON /REPLACE`

This example replaces the server currently connected on drive D with a connection to the server MOON. All other information from the previous connection is maintained.

# Saving Connection Context

To save the current network connection context, use the USE command with the /SAVE qualifier.

The context includes all information that shows up in the listing of active connections.

## Format

USE   *filename* /SAVE

## Parameters

*filename*
Is the file name of a newly created file.

If you do not specify a drive or path before the file name, and DNP is installed, the USE command creates the context file in the default DECNET directory.

If you do not specify a drive or path before the file name, and DNP is not installed, the USE command creates the context file in the current directory.

## Qualifiers

*/SAVE*
Is a qualifier that saves the current connection context to a newly created file, or overwrites an existing file of the same name.

## Description

When you specify a file name and the /SAVE qualifier, USE writes the current context to an ASCII file. There is no default name or location for the context file.

If you specify a nonexistent file name prefixed with an at sign ( @ ), and do not specify the /SAVE qualifier, the USE command creates a context file and saves the new context information. If you specify the /SAVE qualifier, you do not have to use the at sign with the file name.

For disk services, USE saves the device, server, service, and service attributes. For file and print services, USE saves the context in the following manner:

- USE saves the device, server, and service for all connections.

- If the connection contains a user name (originally specified or found in DECALIAS.DAT), USE appends the user name to the connection request and compares the user name with the access control information in DECALIAS.DAT.

  If the user name and access control information are the same, the USE command uses this information by default.

  If the user name does not match the access control information, USE prompts you for the password when restoring the context.

## Examples

1. `USE @TEST2.CMD /LOG`

```
Creating: TEST2.CMD
Writing: USE H: \\LISTER\VXSYS/virtual/replace/ro
Writing: USE I: \\FOWL\XX-XX-XX-XX-XX-XX/virtual/replace/rw/fast
Writing: USE J: \\LOADER\TOOL_BOX/virtual/replace/ro
Writing: USE K: \\LOADER\TOOL_BOX/virtual/replace/ro
Writing: USE K: \\LISTER\PCCOMMON%WARD  /network/replace
Writing: USE P: \\FOWL\THINGS%WARD  /network/replace
```

This example saves the current context to a new file named TEST2.CMD and displays the context information USE writes to TEST2.CMD.

2. `USE TEST1.CMD /SAVE`

This example saves the current context to a file named TEST1.CMD.

## Restoring Connection Context

To restore the current network connection context, use the USE command
with the /RESTORE qualifier.

The context includes all information that shows up in the listing of active
connections.

## Format

USE   *filename* /RESTORE

## Parameters

*filename*
Is the file name of an existing file.

If you do not specify a drive or path before the file name, and DNP is
installed, the USE command searches the default DECNET directory for
the context file.

If you do not specify a drive or path before the file name, and DNP is
not installed, the USE command searches the current directory for the
context file.

## Qualifiers

*/RESTORE*
Is a qualifier that restores connections from an existing context file.

## Description

When you specify a valid context file and the /RESTORE qualifier, the
connections are restored. There is no default name or location for the
context file.

If you specify the file name of an existing file, prefixed with an at sign
(@), but without the /RESTORE qualifier, the USE command restores the
connections. If you specify the /RESTORE qualifier, you do not have to
use the at sign with the filename.

# Examples

1. `USE @TEST2.CMD /LOG`

```
Processing: TEST2.CMD
Processing: USE H: \\LISTER\VXSYS/virtual/replace/ro
Processing: USE I: \\FOWL\XX-XX-XX-XX-XX-XX/virtual/replace/rw/fast
Processing: USE J: \\LOADER\TOOL_BOX/virtual/replace/ro
Processing: USE K: \\LOADER\TOOL_BOX/virtual/replace/ro
Processing: USE K: \\LISTER\PCCOMMON  /network/replace
Processing: USE P: \\FOWL\THINGS%WARD  /network/replace
Processing: USE LPT1: \\FOWL\LN03R_PS%WARD  /network/replace
Processing: USE LPT2: \\LISTER\SYS$PRINT%WARD  /network/replace
```

This example restores connections from the context file TEST2.CMD and
displays the connections USE restores.

2. `USE TEST1.CMD /RESTORE`

This example restores connections from the context file TEST1.CMD.

# Checking Device Status

To check the error status of a device or multiple devices, use the USE
command with the /CHECK qualifier. This command returns a DOS error
level of one that a batch file can check. If a specific error occurred, the
batch file can reconnect or replace the terminated connection.

## Format

USE   *dev: /CHECK*

## Parameters

*dev:*
Is either a letter followed by a colon (to check a single device or printer),
or an asterisk followed by a colon (to check multiple devices or printers).

## Qualifiers

*/CHECK*
Is a qualifier that checks the error status of a device or multiple devices.

## Examples

1. `USE *: /CHECK`
   ```
   Device H: has an error status
   Device I: has an error status
   Device J: is ok
   Device K: is ok
   Device P: has an error status
   ```

This example checks the error status of all the connected devices.

2. `USE H: /CHECK`
   ```
   Device H: has an error status
   ```

This example checks the error status of drive H.

# Displaying Information About File and Print Services

To display information about file and print services on a server, use the
USE command with the /NETWORK and /SHOW qualifiers.

## Format

USE   \\node[\service][%username] [password | *] /NETWORK
/SHOW

## Parameters

*node*
Is the DECnet node name of the server for which you want to display
information.

*service*
Is the name of the file service or printer service for which you want to
display information.

*username*
Is the user name of the user for whom you want to display information.

*password*
Is the password associated with the user name (if a user name is
specified).

*
Prompts you for a user name (if not specified), and a password. When you
enter the password, it is not displayed on the screen.

## Qualifiers

*/NETWORK*
Is a modifying qualifier that indicates you want to display information
about file and printer services.

*/SHOW*
Is a qualifier that displays information about a service.

## Description

If you omit a service type, USE displays limited information about file
and print services. If you specify USE with the /FULL qualifier, USE
displays complete information about file and print services. The default is
a limited display of information.

If you specify a service name, USE displays only services of a particular
name. If you specify also a user name, USE displays services available
only to a single user.

Table 2–7 lists the fields displayed for a file service on a server. These
fields are the same as the fields displayed by the PCSA Manager and are
fully described in *Server Administration with Commands*.

**Table 2–7   Fields for Files Services on a Server**

| Field | Description |
|-------|-------------|
| User Name | The VMS user name to which the service has been granted |
| Alias Name | The file or print alias name that is used for connecting to the service |
| Service Name | The file or print service name as created by PCSA Manager |
| Access | The type of access allowed: Read, Write, Create |
| RMS Protection | The default RMS protection for files created on the file service |

To pause information displayed by this command, use Ctrl/S and Ctrl/Q,
or pipe the output through the DOS MORE command.

## Examples

1. `USE \\KGB /NETWORK`
   ```
   USE version 3.0     PCSA Network Connection Manager

   Service information for \\KGB

   File Server Authorized Services:

   User name Alias name  Service name Access RMS protection
   --------- ----------- ------------ ------ --------------
   <PUBLIC>  MPLISSYSD32 MPLISSYSD32  R      S:RWED,O:RWED,G:,W:
   SYSTEM    MPLISSYSD32 MPLISSYSD32  RWC    S:RWED,O:RWED,G:,W:
   WARD      KGBCORE     KGBCORE      RWC    S:RWED,O:RWED,G:RWED,W:
   ```

This example displays information about file and print services on node KGB.

2. `USE \\KGB%WARD /NETWORK /SHOW`
   ```
   USE Version 3.0     PCSA Network Connection Manager

   Service information for \\KGB%WARD

   File Server Authorized Services:

   User name Alias name Service name Access RMS protection
   --------- ---------- ------------ ------ --------------
   WARD      KGBCORE    KGBCORE      RWC    S:RWED,O:RWED,G:RWED,W:
   ```

This example displays information about file and print services on node KGB for user WARD.

3. `USE \\KGB\KGBCORE /NETWORK /SHOW`
   ```
   USE Version 3.0     PCSA Network Connection Manager

   Service information for \\KGB\KGBCORE

   File Server Authorized Services:

   User name Alias name Service name Access RMS protection
   --------- ---------- ------------ ------ ----------------------
   LUDENS    KGBCORE    KGBCORE      RWC    S:RWED,O:RWED,G:RWED,W:
   WARD      KGBCORE    KGBCORE      RWC    S:RWED,O:RWED,G:RWED,W:
   NAC       KGBCORE    KGBCORE      RWC    S:RWED,O:RWED,G:RWED,W:
   ```

This example displays information about file services named KGBCORE on node KGB.

# Displaying Information About Virtual Disk Services

To display information about disk services available on a server, use the
USE command with the /VIRTUAL and /SHOW qualifiers.

## Format

USE   \\node[\service] /VIRTUAL /SHOW

## Parameters

*node*
Is the DECnet node name of the server for which you want to display
information.

*service*
Is the name of the disk service for which you want to display information.

## Qualifiers

*/VIRTUAL*
Is a modifying qualifier that indicates that you want to display
information about disk services.

*/SHOW*
Is a qualifier that displays information about services.

## Description

If you specify a server, USE displays limited information about disk
services on that server. If you specify USE with the /FULL qualifier,
USE displays complete information. The default is a limited display of
information.

If you can specify a service name, USE displays information about each
server offering a particular disk service.

Table 2–8 lists the fields displayed for disk services on a server. These
fields are the same as the fields displayed by PCSA Manager and are fully
described in *Server Administration with Commands*.

**Table 2–8   Disk Services on a Server**

| Field | Description |
| --- | --- |
| Service Name | The service name of the disk service |
| Type | The type of disk service:  BOOT, USER, SYSTEM, APPLICATION |
| Server | The node name of a disk server offering this service |
| Limit | The maximum number of connections allowed to the service |
| Users | The current number of connections to the service |
| Access | The access mode of this service: RO or RW |
| Rating | The disk service rating |
| Status | The status of the disk service: MNT, DISMNT, PERM, PEND |

Table 2–9 lists the fields displayed for servers offering a specific disk service.

**Table 2–9   Disk Servers Offering a Service**

| Field | Description |
| --- | --- |
| Node Name | The node name of a disk server offering this service |
| Service Rating | The disk service rating |
| Password | Whether the service requires a password: Yes or No |
| Access Mode | The access mode of this service: RO or RW |
| Maximum Connects | The maximum number of connections allowed to the service |
| Current Connects | The current number of connections to the service |
| Network Address | The Ethernet station address of the disk server |

To pause information displayed by this command, use Ctrl/S and Ctrl/Q, or pipe the output through the DOS MORE command.

# Examples

**1.** `USE \\KGB /VIRTUAL /SHOW`

```
USE Version 3.0     PCSA Network Connection Manager

Service information for \\KGB

Disk server services:

Service name Type Server Limit Users Acc Rating Status
------------ ---- ------ ----- ----- --- ------ ------
XX-XX-XX-XX-XX-XX
             USER KGB       1     0 RW        1 MNT PERM
             USER KGB       1     0 RW        1 MNT PERM
BIGDISK      USER KGB       1     0 RW        1 MNT PERM
CCLDISK      USER KGB       1     0 RW        1 MNT PERM
```

This example displays the services offered by node KGB.

**2.** `USE \\KGB /VIRTUAL /SHOW /X`

```
USE Version 3.0     PCSA Network Connection Manager

Service information for \\KGB\XX-XX-XX-XX-XX-XX

Disk server services:

Service name Type Server Limit Users Acc Rating Status
------------ ---- ------ ----- ----- --- ------ --------
XX-XX-XX-XX-XX-XX (MIDDLE)
             BOOT KGB       1     0 RW        0 MNT PERM
```

This example substitutes the Ethernet address for the service name and displays information about the service on node KGB.

**3.** `USE VXSYS /SHOW`

```
USE Version 3.0     PCSA Network Connection Manager

Service information for VXSYS

          Service            Access Maximum  Current
Node Name Rating Password Mode    Connects Connects Network Address
--------- ------ -------- ------  -------- -------- -----------------
LISTER    255    No       RO      no limit   15     XX-XX-XX-XX-XX-XX
SUPERA    255    No       RO      no limit   18     XX-XX-XX-XX-XX-XX
```

This example displays the nodes offering the service VXSYS.

4.  USE /X /SHOW

```
USE version 3.0     PCSA Network Connection Manager

Service information for XX-XX-XX-XX-XX-XX

           Service           Access Maximum  Current
Node Name  Rating  Password  Mode   Connects Connects Network Address
---------  -------  --------  ------ -------- -------- -----------------
FOWL         1       No        RW      1        0       XX-XX-XX-XX-XX-XX
KGB          0       No        RW      1        0       XX-XX-XX-XX-XX-XX
```

This example displays the nodes offering the service with the specified
Ethernet address.

# Displaying Installed Components and Client Information

To display information about all installed PCSA Client network components and client node information, use the USE command with the /STATUS qualifier.

## Format

USE   */STATUS*

## Qualifiers

*/STATUS*
Is a qualifier that displays information about all the installed DECnet/PCSA network components.

## Example

```
USE /STATUS

USE version 3.0     PCSA Network Connection Manager
Copyright (c) 1988 by Digital Equipment Corporation

Component Information

    Scheduler is installed
    Datalink is installed and is running
    DECnet is installed
    Session is installed
    Redirector is installed
    LAT is not installed
    LAST is installed
    LAD is installed
    CTERM is not installed
```

```
Client Information

    DECnet node name:  MIDDLE (1.111)
    Station address:   XX-XX-XX-XX-XX-XX
    Hardware address:  XX-XX-XX-XX-XX-XX
    Ethernet hardware: VAXmate LANCE
    Physical drives:   15 (A:-O:)
    Logical drives:    26 (A:-Z:)
    Virtual drives:     8 (H:-O:)
```

This example displays all information about the installed DECnet/PCSA
network components.

## Changing the VMS Directory of a Connection

To change a connection from one VMS directory to another, specified directory, use the USE command with the /SETDIR qualifier.

You can also use this command to connect to any directory on a server, even if it is not offered as a service.

### Format

USE   *dev: service /SETDIR*

### Parameters

*dev:*
Must be the drive letter, followed by a colon, of a drive connected to a file service.

*service*
Is a VMS file specification containing a disk name and a directory name.

### Qualifiers

*/SETDIR*
Is a qualifier that changes the VMS directory to the specified directory.

### Description

The connection being changed must have been established with a valid VMS user name and password.

### Example

```
USE X: \\BUBBLE\PCCOMMON%LORD *
PASSWORD:
USE X: \ABC:[ENG.DOS.V33] /SETDIR /LOG
Device X: set to directory ABC:[ENG.DOS.V33]
```

This example changes the connection of drive X from \\BUBBLE\PCCOMMON to \\BUBBLE\ABC:[ENG.DOS.V33].

# Controlling Click of Virtual Disks

To control the click of a drive connected to a virtual disk service, use the USE command with the /CLICK and /NOCLICK qualifiers.

The clicking is an audible indication that the virtual disk is being accessed. You might use this clicking to determine whether an application program is accessing a virtual disk when it is supposed to be accessing it.

The /CLICK and /NOCLICK qualifiers affect all virtual disks. In other words, all virtual disks click, or none of them click.

Do not use the /CLICK or /NOCLICK qualifiers with any other parameters or qualifiers.

## Format
USE   /CLICK
USE   /NOCLICK

## Qualifiers

*/CLICK*
Is a qualifier that turns on clicking of virtual disks.

*/NOCLICK*
Is a qualifier that turns off clicking of virtual disks.

## Example

```
USE /NOCLICK
```

This example turns off the clicking of all virtual disks.

## Modifying MS-DOS Status of Unconnected Virtual Disk Drives

To modify the DOS drive characteristics of unconnected virtual drives so that they do not appear as valid drives, use the USE command with the /FIXUP qualifier.

DOS and MS-Windows both treat unconnected virtual drives as active drives. They are legal in all functions and show up in the executive window. If you try to use these unconnected drives, DOS or MS-Windows generates a fatal error. However, using the USE command with the /FIXUP qualifier, you can mark these unconnected drives. Once marked, the unconnected drives do not appear as active drives in the MS-DOS Executive window.

If an unconnected virtual drive is used in a JOIN or SUBST operation, and then disconnected, the drive appears as a valid drive until you perform another USE /FIXUP.

## Format

USE   /FIXUP

## Qualifiers

### /FIXUP
Is a qualifier that modifies the DOS drive characteristics of unconnected drives.

## Description

After you perform a USE /FIXUP, DOS returns the non-fatal error "Invalid Drive Specification" any time you try to use an unconnected drive, and MS-Windows ignores the unconnected virtual drives.

When a virtual drive is connected, USE updates the DOS status of the drive.

You can use the /LOG qualifier with the /FIXUP qualifier to display the affected drives.

## Example

```
USE /FIXUP /LOG
Disabling drive H:
Disabling drive I:
Disabling drive J:
Disabling drive K:
```

This example modifies the DOS characteristics of unconnected virtual drives and displays the drives affected by the modifications.

Use the USE command to reconnect a disabled device and reactivate it.

# Displaying Information About the Action Performed

To display information about the action performed for connect, disconnect, and replace requests, use the USE command with the /LOG qualifier. The default is /NOLOG, unless the device is the ambiguous device, in which case the default is /LOG.

## Format

USE   \\*node[\service]* /LOG

## Parameters

*node*
Is the DECnet node name of the server on which the action is performed.

*service*
Is the name of the service on which the action is performed.

## Qualifiers

*/LOG*
Is a modifying qualifier that displays information about the action performed.

## Examples

1. `USE K: TOOL_BOX /LOG`
   `Device K: connected to \\VANNA\TOOL_BOX`

This example displays the server and service connected to drive K.

2. `USE LPT1: \\FOWL\LN03R_PS /LOG`
   `Device LPT1: connected to \\FOWL\LN03R_PS%WARD`

This example displays the print service connected to LPT1.

3.  USE K: \\SUPERA /REPLACE /LOG /NETWORK
    Device K: replaced with \\SUPERA\PCCOMMON%WARD

This example replaces the node to which drive K is connected with the
node SUPERA. The /LOG qualifier displays the effect of the replacement,
and the /NETWORK qualifier indicates the connection and replacement is
to a file service.

4.  USE H: /DISCONNECT /LOG
    Device H: disconnected from \\SUPERA\VXSYS

This example disconnects drive H from service VXSYS on node SUPERA
and displays the disconnect information.

5.  USE LPT1: /DISCONNECT /LOG
    Device LPT1 disconnected from \\FOWL\LN03R_PS%WARD

This example disconnects LPT1 from print service LN03R_PS on node
FOWL and displays the disconnect information.

6.  USE *: /REPLACE /LOG /NETWORK
    Device P: replaced with \\FOWL\THINGS%WARD
    Device V: replaced with \\FOWL\THINGS%WARD
    Device W: replaced with \\FOWL\THINGS%WARD
    Device LPT1: replaced with \\FOWL\LN03R_PS%WARD

This example shows the /LOG qualifier used with the wildcard device
name. The USE command displays all connection information.

7.  USE @TEST1.CMD /RESTORE /LOG
    Processing: TEST1.CMD
    Processing: H: \\LISTER\VXSYS/virtual/replace/ro
    Processing: I: \\FOWL\XX-XX-XX-XX-XX-XX/virtual/replace/rw/fast
    Processing: J: \\LOADER\TOOL_BOX/virtual/replace/ro
    Processing: K: \\LOADER\TOOL_BOX/virtual/replace/ro
    Processing: K: \\LISTER\PCCOMMON  /network/replace
    Processing: P: \\FOWL\THINGS%WARD  /network/replace
    Processing: LPT1: \\FOWL\LN03R_PS%WARD  /network/replace
    Processing: LPT2: \\LISTER\SYS$PRINT%WARD  /network/replace

This example shows the /LOG and /RESTORE qualifiers used together.
The USE command displays all information about the restored
connections.

8.  USE @TEST2.CMD /SAVE /LOG
```
Creating: TEST2.CMD
Writing: H: \\LISTER\VXSYS/virtual/replace/ro
Writing: I: \\FOWL\XX-XX-XX-XX-XX-XX/virtual/replace/rw/fast
Writing: J: \\LOADER\TOOL_BOX/virtual/replace/ro
Writing: K: \\LOADER\TOOL_BOX/virtual/replace/ro
Writing: K: \\LISTER\PCCOMMON%WARD   /network/replace
Writing: P: \\FOWL\THINGS%WARD   /network/replace
```

This example shows the /LOG and /SAVE qualifiers used together. The USE command displays all information about the saved connections.

# Effects of Modifying Qualifiers

Table 2–10 shows whether a specific qualifier affects a specific request type. For example, the /FULL qualifier does not affect a connection request; it does affect a list request. The actual effects are described in detail in this section.

**Table 2–10   Effects of Modifying Qualifiers on Requests**

| Request Type | LOG | NOLOG | FULL | BRIEF | VIRTUAL | NET | X |
|---|---|---|---|---|---|---|---|
| Connect | Yes | Yes | No | No | Yes | Yes | Yes |
| Disconnect | Yes | Yes | No | No | Yes | Yes | Yes |
| Replace | Yes | Yes | No | No | Yes | Yes | Yes |
| Show | No | No | Yes | Yes | Yes | Yes | Yes |
| Check | No | No | No | No | Yes | Yes | Yes |
| List | No | No | Yes | Yes | Yes | Yes | Yes |
| Status | No | No | No | No | No | No | No |
| Fixup | Yes | Yes | No | No | No | No | No |
| Save | Yes | Yes | No | No | Yes | Yes | No |
| Restore | Yes | Yes | No | No | Yes | Yes | No |
| Click | Yes | Yes | No | No | No | No | No |
| Noclick | Yes | Yes | No | No | No | No | No |
| Help | No | No | No | No | No | No | No |
| Setdir | Yes | Yes | No | No | No | No | No |
| Wildcard Device | Yes | Yes | Yes | No | Yes | Yes | Yes |
| Ambiguous Device | Yes | Yes | No | No | Yes | Yes | Yes |

The /FULL and /BRIEF qualifiers apply only to the USE display of active connections and the /SHOW functions. The default is /BRIEF.

The /VIRTUAL and /NETWORK qualifiers affect all connection-related requests (connect, disconnect, replace, check, and list) the same way. USE interprets the request as a virtual disk function or a redirector function.

For the USE /SHOW request, the service type qualifiers determine the
type of services displayed.

The wildcard device ( *: ) and ambiguous device ( ?: ) use the service type
qualifier to determine the devices used in the request. USE /VIRTUAL
uses only virtual drives; USE /NETWORK uses only file and printer
services.

You can use the /X qualifier in place of a service name.

# 3

# Using Printer Services on the PCSA Network

The PCSA NET PRINT command provides the functions necessary to copy files to a print queue or service, set and show print qualifiers, list queue requests, and delete print requests.

Before you can print a file with the NET PRINT command, you must use the USE command to connect a logical device, such as LPT1, LPT2, or LPT3, to a PCSA print service, or a VMS print queue on a server. For more information about connecting with the USE command, see the section "Connecting to a File or Printer Service" in Chapter 2, Managing Network Connections with the USE Utility.

**NOTE**
Specify a user name and password when you connect a logical device to a printer queue or service; the NET PRINT command employs user names for authorization in delete and list functions. For example:

```
USE LPT1: \\BUBBLE\SYS$PRINT%SMITH *
```

The NET PRINT command allows you to assign print qualifiers to any logical print device. For example, the following command sets the device connected to LPT1 to print two copies of any print request sent to it:

```
NET PRINT LPT1: /SET /COPIES:2
```

The print qualifiers through /SET remain in effect until you change them, or disconnect from the logical device. Print qualifiers without /SET remain in effect only for the current NET PRINT command. Subsequent print operations are not affected by print qualifiers used with the /SET qualifier. For example, assume you enter the following command.

```
NET PRINT LPT1: BOOKS.TXT /COPIES:20
```

The NET PRINT command prints BOOKS.TXT 20 times. Any NET PRINT commands you enter after this are not affected by the /COPIES:20 qualifier.

## Print Qualifiers

Use the following conventions when using print qualifiers with the NET PRINT command.

- You can abbreviate print qualifier names. However, the print qualifier name must be unique. Four characters (five characters in the case of /NO print qualifiers) of a print qualifier name are guaranteed to be unique. For example, you can abbreviate the qualifier /PARAMETER to /PARA. You cannot abbreviate /FORM.

- You can use either the colon ( : ) or the equal sign ( = ) to separate a print qualifier from its value. For example, /COPIES=2 and /COPIES:2 are equivalent.

  If you specify more than one value for a print qualifier, enclose the values in parentheses. For example, /PAGES=(1,25). If you specify only one value, you can omit the parentheses.

- Any text or string values that include characters or delimiters other than uppercase letters and the underscore ( _ ) must be enclosed in double quotes. For example, /NOTE="TWO_PAGES_PER_SHEET."

  **NOTE**
  The NET PRINT command converts all lowercase characters to uppercase characters and does not allow spaces and tabs in text strings, even in text strings surrounded with quotes.

- Print qualifiers are processed from left to right. If you repeat a print qualifier, the NET PRINT command uses the last (rightmost) occurrence.

- The special qualifier ( /* ) represents the current set of print qualifiers assigned to a logical device. For more information about the special qualifier, see the Setting and Showing Print Qualifiers in this chapter.

Table 3–1 lists valid NET PRINT qualifiers. These print qualifiers are a subset of VMS/DCL PRINT command qualifiers. The NET PRINT command uses the DCL syntax.

**Table 3–1   NET PRINT Qualifiers**

| Qualifier | Explanation |
|---|---|
| /* | Represents the current set of print qualifiers (if any). These print qualifiers are assigned to a logical drive using the /SET qualifier. |
| /AFTER=time | Holds the print request until the specified time. You can specify a date, a time, or both. If you omit either date or time, the current value is used. The formats are:<br><br>dd-mmm-yyyy[:hh:mm]<br><br>hh:mm<br><br>Where: |

| | |
|---|---|
| dd | Is the day (01, 02,..., 31) |
| mmm | Is the month (Jan, Feb,..., Dec) |
| yyyy | Is the year (1988,...) |
| hh | Is the hour (00 through 23) |
| mm | Is the minutes (00 through 59) |

| Qualifier | Explanation |
|---|---|
|  | If the time has passed, the request is queued for printing immediately. |
| /BURST<br>/NOBURST | Controls whether a burst page is printed preceding a file. The default is /NOBURST. (A burst page is a page printed over the perforation between pages for easy identification of individual files.)<br><br>When you specify /BURST, you need not specify /FLAG; a flag page automatically follows a burst page. |
| /CHARACTERISTICS=(code,...) | Specifies one or more characteristics for printing the file. If you specify only one characteristic, you can omit the parentheses. Codes for characteristics can be either a name or values from 0 through 127 and are defined by the system administrator. To display the characteristics for a specific queue, use the SHOW QUEUE/CHARACTERISTICS command. |

**Table 3–1 (Cont.)   NET PRINT Qualifiers**

| Qualifier | Explanation |
| --- | --- |
| | A print request can run on a printer queue only if each characteristic specified with the NET PRINT command is specified for that printer queue. |
| /COPIES=n | Specifies the number of copies to print. The value of n can be from 1 through 255; the default is 1. |
| /FLAG<br>/NOFLAG | Controls whether a flag page is printed before a file. The flag page contains the name of the user submitting the request, the job entry number, and other information about the file being printed. |
| /FORM=type | Specifies the name or number of the form for the print queue. The default is /FORM=0.<br><br>Specify the form type, using a numeric value or alphanumeric name. Form types can refer to the print image width and length or to the type of paper. Codes for form types are installation-defined. To display the forms for a specific queue, use the VMS command SHOW QUEUE /FORM.<br><br>If you specify a form with a stock type different from the stock type of the form on the queue, your request remains pending until the stock type on the queue is set to equal the stock type of the request. |
| /HEADER<br>/NOHEADER | Controls whether a heading line is printed at the top of each page. The default is /NOHEADER. |
| /JOB_COUNT=n | Prints the request n times. The value of n can be 1 to 255; the default is 1. This print qualifier is equivalent to the /COPIES print qualifier. |
| /LOWERCASE<br>/NOLOWERCASE | Indicates whether the request must be printed on a printer that supports both lowercase and uppercase letters. The default is /NOLOWERCASE. |

Table 3–1 (Cont.)   NET PRINT Qualifiers

| Qualifier | Explanation |
| --- | --- |
| /NAME=job-name | Names the request. The name consists of 1 through 39 alphanumeric characters. The job name is used in the queue listing display and is printed on the flag page for the request. |
| /NOTE=string | Specifies a message string of up to 255 characters to appear on the flag page of the request. |
| /OPERATOR=string | Specifies a message string of up to 255 characters to be sent to the operator when the request begins to print. |
| /PAGES=([lowlim,]uplim) | Specifies the number of pages to print for the request. You can use the /PAGES print qualifier to print portions of long files. By default, all pages of the file are printed. |
| | The lower limit specifier (lowlim) refers to the first page to be printed. If you omit the lower limit specifier, the printing starts on the first page of the file. |
| | The upper limit specifier (uplim) refers to the last page to be printed. If you want to print to the end of the file, but do not know how many pages the file contains, use the form /PAGES=(lowlim,0). |
| /PARAMETERS=(param[,...]) | Specifies from one to eight parameters to be passed with the request; each parameter can contain up to 255 characters. Commas delimit individual parameters. Enclose parameters containing special characters or delimiters with quotation marks " ". For example, to print two reduced size pages on one physical sheet of paper on a PrintServer 40 printer, specify /PARAM="UNNUMBER_UP=2". |
| | Parameters are specific to the type of printer and can control page orientation, tray selection, and so on. For more information about parameters and printer types, see your printer documentation. |
| | The total length of all parameters must be less than 255 characters. |

**Table 3–1 (Cont.)    NET PRINT Qualifiers**

| Qualifier | Explanation |
|---|---|
| /PASSALL<br>/NOPASSALL | Specifies whether all formatting characters are sent to the printer. When you specify /PASSALL, all print qualifiers affecting formatting, as well as /HEADER, /PAGES, and /SETUP print qualifiers, are ignored. |
| /PRIORITY=n | Specifies the priority of the print request. The value of n can be from 0 through 255, where 0 is the lowest priority and 255 is the highest. |
| /RESTART<br>/NORESTART | Restarts the request after a system crash or a STOP/REQUEUE command. If you specify /NORESTART, the print request is not restarted. |
| /SETUP=(module[,...]) | Extracts the specified modules from the device control library (containing escape sequence modules for programmable printers) and copies the modules to the printer before a file is printed. By default, no device control modules are copied. |
| /SPACE<br>/NOSPACE | Controls whether the print request output is double-spaced. The default is single-spaced (/NOSPACE) output. |
| /TRAILER<br>/NOTRAILER | Controls whether a trailer page is printed at the end of a file. The trailer page displays the job entry number as well as information about the user submitting the request and the files being printed. |

# NET PRINT

The following sections contain information about:

- Connecting to a queue or service

- Copying files to a queue or service

- Setting and showing print qualifiers

- Listing queued print requests

- Deleting print requests

- Getting help

- Print qualifiers

## Setting and Showing Print Qualifiers

Use the following command formats to set or show print qualifiers for a device.

## Format

NET PRINT   *dev: /SET [print qualifier...]*
NET PRINT   *dev: /SHOW*
NET PRINT   */SHOW*

## Parameters

*dev:*
Is a logical name, such as LPT1. A colon is required.

## Qualifiers

*/SET*
Sets the print qualifiers you specify. These print qualifiers remain in effect until you change them or disconnect from the logical device. You can also use /SET without any print qualifiers to remove all print qualifiers for a print device.

The NET PRINT /SET command does not check the validity of all print qualifier values. For example, it does not check whether a requested form or set-up module actually exists. Errors are discovered only when you attempt to queue a print job from the logical device with the invalid print qualifiers. If print qualifiers are not valid, the print job is not queued and no message is displayed. Therefore, checking your print job status is recommended. Use the print queue listing feature of the NET PRINT command.

If you specify illegal values for the /CHARACTERISTICS, /FORM, /PARAMETERS, or /SETUP qualifiers, the following occurs:

| | |
|---|---|
| /CHARACTERISTICS | A NET 817 error is generated when you queue the print job. |
| /FORM | The job is rejected when you queue it. No error is generated. |

| | |
|---|---|
| /PARAMETERS | The job is rejected when it is printed. No error is generated. |
| /SETUP | The job is rejected when you queue it. No error is generated. |

### /SHOW
Lists the node and service or queue to which you are connected. If you omit the device, all redirected printers are displayed.

### print qualifier
A word or phrase, beginning with a forward slash, that modifies the NET PRINT command. For a complete list of print qualifiers, see Table 3–1.

## Description

Before you set print qualifiers with NET PRINT /SET, use NET PRINT /SHOW to display the current print qualifiers for a device.

The special qualifier (/*) represents the current set of print qualifiers (if any). You can use the /* qualifier to modify the current set of print qualifiers instead of replacing them. For example, to add or replace the /NAME print qualifier in the current set of print qualifiers, enter:

```
NET PRINT LPT1: /SET /* /NAME=new_name
```

The /* qualifier is also useful for setting print qualifier lists that are too long for one command line. In the following example, the first line sets the /PARAMETER qualifier. The second line retains the current settings (with the /*) and sets the /NOTE qualifier.

```
NET PRINT LPT1: /SET /PARAMETER="Number=2"
NET PRINT LPT1: /SET /* /NOTE="Two_Pages_Per_Sheet"
```

## Examples

Examples 1 through 3 should be viewed as a unit.

1. `NET PRINT /SHOW`

   ```
   LPT1: \\TOOTS\ANSI%JONES
         No qualifiers set

   LPT2: \\BUBBLE\LPS$POSTSCRIPT%JONES
         No qualifiers set

   LPT3: \\RAINBO\SYS$LN03%JONES
   Command completely successfully.
   ```

This example displays the current print qualifiers for the queue or service connected to LPT1, LPT2, and LPT3 before Example 2 sets the /NOTE and the /PARAM qualifiers.

2. `NET PRINT LPT1: /SET /NOTE=END_OF_MONTH_REPORT`
   ```
   Command completed successfully.
   ```

   `NET PRINT LPT2: /SET /PARAM=("INPUT_TRAY=BOTTOM",-`
   `-$"OUTPUT_TRAY=TOP")`
   ```
   Command completed successfully.
   ```

This example sets the /NOTE print qualifier for LPT1 and the /PARAM print qualifier for LPT2.

3. `NET PRINT /SHOW`

   ```
   LPT1: \\TOOTS\ANSI%JONES
         /NOTE="END_OF_MONTH_REPORT"

   LPT2: \\BUBBLE\LPS$POSTSCRIPT%JONES
         /PARAMETERS=("INPUT_TRAY=BOTTOM","OUTPUT_TRAY=TOP")

   LPT3: \\RAINBO\SYS$LN03%JONES
   Command completely successfully.
   ```

This example displays the new print qualifiers for the queue or service connected to LPT1, LPT2, and LPT3.

**NOTE**
NET PRINT /SET and NET PRINT /SHOW are available only for PCSA Version 2.2 or later.

## Copying Files to a Queue or Service

Use the following command format to copy a file to a service or queue
connected to the device.

## Format

NET PRINT   *[drv:][\path\]filename.ext dev: [print qualifier,...]*

## Parameters

*drv:*
Is the drive containing the file you want to copy to the print queue or
service.

*path*
Is the path to the directory containing the file you want to copy to the
print queue or service.

*filename.ext*
Is file name and file extension of the file you want to copy to the print
queue or service.

*dev:*
Is a logical name, such as LPT2. A colon is required.

## Qualifiers

*print qualifier*
A word or phrase, beginning with a forward slash, that modifies the NET
PRINT command. For a complete list of print qualifiers, see Table 3–1.
The qualifiers used here are temporary. They are not in effect after the
print operation is completed.

## Description

When you use the NET PRINT command to copy a file to a printer queue or service, the command determines the qualifiers as follows:

1. Uses the default print qualifiers previously set for the logical device.

2. Changes the request name (/NAME=) to the name of the file from the current command line.

3. Uses the print qualifiers you specify on the command line to replace default print qualifiers previously set.

4. Restores the default print qualifiers after copying the file.

## Examples

1. `NET PRINT LPT1: /SET /AFTER=23:00`
   `Command completed successfully.`

This example sets the default for the queue connected to LPT1 to print after 11:00 PM. Therefore, anything you send to LPT1 is printed after 11:00 PM. Jobs that were in the queue when you entered this command are not affected.

2. `NET PRINT EXAMPLE1.PS LPT1:`
   `Command completed successfully.`

This example prints the file EXAMPLE1.PS using the default print qualifiers.

3. `NET PRINT EXAMPLE2.PS LPT1: /AFTER=17:00`
   `Command completed successfully.`

This example prints the file EXAMPLE2.PS after 5:00 PM (instead of after 11:00 PM). No other files are affected by the /AFTER qualifier.

4. `NET PRINT EXAMPLE3.PS LPT1: /NAME=JIM_DANDY`
   `Command completed successfully.`

This example prints the file EXAMPLE2.PS using all the default print parameters except /NAME, which is changed to JIM_DANDY.

5.  **NET PRINT LPT1: /USER**

```
    User            Job Name      Job# Size  Pos Status
    ------------- ------------- ---- ----  --- -------
Queue LN03R$ANSI
    JONES         EXAMPLE1.PS   594  512    0 Holding until 13-Dec-1988 23:00
    JONES         EXAMPLE2.PS   595  512    1 Holding until 13-Dec-1988 17:00
    JONES         JIM_DANDY     596  512    2 Holding until 13-Dec-1988 23:00

Command completed successfully.
```

This example shows the three print requests in the queue with the specific print qualifiers set.

## Listing Queued Print Requests

Use the following command formats to list print requests and the status of print requests in a print queue.

Use the first command format to list all print requests in all queues on a node.·

Use the second and third formats to list only print requests in the specified queue or queue associated with a logical device. Print requests for all users are listed, unless you specify the /USER print qualifier.

Use the fourth format to list only a specified print request.

## Format

NET PRINT    \\node [/USER=username]
NET PRINT    \\node\queue [/USER=username]
NET PRINT    dev: [/USER[=username]]
NET PRINT    dev: job-num

## Parameters

*node*
Is the DECnet node name where the print queue is located.

*queue*
Is the print service or queue name.

*dev*
Is a logical name such as LPT2. A colon is required.

*job-num*
Is the job number of a print request on a logical device.

*username*
Is the user name of the jobs you want to list.

## Qualifiers

### /USER=username

Specifies that the NET PRINT command list only print requests for a specific user. If you omit a user name, the NET PRINT command uses the user name of the connection (if any).

## Examples

1.  ```
    NET PRINT \\BUBBLE
        User               Job Name                 Job# Size  Pos Status
        ------------       ----------------------   ---- ----  --- -------
    Queue LPS$POSTSCRIPT
        JONES              EXAMPLE2.PS              923  512   1
        JONES              LETTER                   162  512   3
        JONES              EXAMPLE1.PS              676  512   5
    Queue SYS$LN03
        JONES              REPORT                   627  512   1
        JONES              JONESPCFS173865          890  512   2

    Command completed successfully.
    ```

    This example displays all the requests in all the queues on the node BUBBLE.

2.  ```
    NET PRINT \\BUBBLE\LPS$POSTSCRIPT /USER=JONES
        User               Job Name                 Job# Size  Pos Status
        ------------       ----------------------   ---- ----  --- -------
    Queue LPS$POSTSCRIPT
        JONES              LETTER                    162  512   3
    ```

    This example displays all the requests in the queue LPS$POSTSCRIPT on the server BUBBLE for the user JONES.

3.  ```
    NET PRINT LPT1: /USER=SMITH
        User               Job Name                 Job# Size  Pos Status
        ------------       ----------------------   ---- ----  --- -------
    Queue LN03R$ANSI
        SMITH              MEMO                      368  512   5
    ```

    This example displays all the requests in the service connected to LPT1 for the user SMITH.

4. `NET PRINT LPT1: /USER`

```
    User             Job Name                   Job# Size  Pos Status
    -------------    ----------------------     ---- ----  --- -------

    Queue LN03R$ANSI
      JONES          LIST                        121  512    2
```

This example displays all the requests in the service connected to LPT1
for the user name specified when LPT1 was connected.

5. `NET PRINT LPT1: 121`

```
    User             Job Name                   Job# Size  Pos Status
    -------------    -----------------------    ---- ----  --- -------

    Queue LN03R$ANSI
      JONES          LIST                        121  512    2
```

This example displays job 121 in the service connected to LPT1.

## Deleting Print Requests

Use the following format to delete one or more print requests on a device.

## Format

NET PRINT   *dev: job-num /DELETE*

## Parameters

*dev:*
Is a logical name such as LPT2. A colon is required.

*job-num*
Is the job number of the requests you want to delete.

## Qualifiers

*/DELETE*
Is the qualifier you specify to delete a print request.

## Description

For the print request to be deleted, the user name of the connection
making the delete request must match the user name of the print
request. You cannot delete a print request from the default account
(PCFS$ACCOUNT). Therefore, requests printed from a default account
cannot be deleted from the workstation.

To display a user's print jobs, use the NET PRINT command with the
/USER qualifier.

## Example

```
NET PRINT LPT2: /USER
  User              Job Name                 Job# Size  Pos Status
  -------------     ---------------------    ---- ----  --- -------
Queue LPS$POSTSCRIPT
  JONES             EXAMPLE2.PS              923  512   1
  JONES             EXAMPLE1.PS              676  512   5

NET PRINT LPT2: 923 /DELETE
Command completed successfully
```

This example deletes JONES' request 923 from the queue connected to
LPT2. The first command, which contains the /USER qualifier, displays
the job numbers for JONES' jobs. The second command deletes the
specified job.

## Getting Help

Use the NET HELP PRINT command to display information about print commands and qualifiers.

## Format

NET HELP PRINT

# 4

# Using LATCP to Add Preferred Services

The PCSA Version 3.0 SETHOST utility enables your workstation to emulate a terminal and use programs running on a host computer. Each host computer that offers terminal services sends out an announcement over the network, which your workstation receives. Before your workstation can use terminal services on a host computer, you must add the name and address of the service to the LAT service table. You do this using the LATCP command. LATCP saves:

*   Time, because you don't have to wait for service announcements. Once added, the services you want to connect to are already in the LAT service table.

*   Memory, because you can add and delete services as your needs change. Otherwise, you would need a large service table containing all the services you might ever need. This wastes memory that could be used for other purposes.

After a service is added to the LAT service table, it is called a *preferred service*. Preferred services are loaded into the LAT service table at startup.

The PCSA LAT Control Program (LATCP) utility lets you:

*   Add a preferred service and display current services

*   Delete a preferred service

*   Move preferred services from DECNODE.DAT to DECLAT.DAT

*   Display information about LAT services

*   Unload LAT.EXE, which stops any active LAT sessions and removes the LAT program from memory.

Previous versions of PCSA stored preferred services in DECNODE.DAT. PCSA Version 3.0 stores preferred services in both DECNODE.DAT and DECLAT.DAT. LATCP provides the CONVERT command, which moves all the preferred services in DECNODE.DAT to DECLAT.DAT.

You cannot store cluster names and terminal server names in
DECNODE.DAT.

This chapter is organized into the following sections:

- Invoking LATCP
- Adding and displaying preferred services
- Moving preferred services
- Deleting preferred services
- Exiting LATCP
- Getting help
- Displaying LAT characteristics
- Displaying LAT counters
- Displaying LAT services
- Unloading LAT.EXE
- Zeroing LAT counters

## Invoking LATCP

To start the LATCP utility, enter the following:

```
C:\> LATCP
```

# Adding Preferred Services

The ADD command adds LAT preferred services to DECLAT.DAT. Then, you can use services or run SETHOST and use VMS programs running on a host computer. Preferred services save memory because you don't need a large service table to listen for service announcements.

After you add one or more services, exit LATCP. Then, restart LAT by entering:

```
c:\> LAT
```

After you restart LAT, the LAT service table is updated.

# Format

ADD   *[node address | ethernet address] [servicename]*

# Parameters

### node address
Is the DECnet node address of the host computer offering the service. The DECnet address is a decimal string that is unique for each node. The decimal string is made up of an area number between 1 and 63 followed by a decimal point, then a node number, which is a number between 1 and 1023. For example, 59.972 is a valid DECnet node address. If you do not know the node address for a specified node, see your system administrator.

### ethernet address
Is the Ethernet address of the host computer offering the service. A valid Ethernet address is an alphanumeric string of the form XX-XX-XX-XX-XX-XX. For example, 08-00-2B-03-15-9E is a valid Ethernet address. When you use the ADD command without parameters, the Ethernet address of the host computers offering LAT services is displayed on your workstation screen.

### servicename
Is the service name of the preferred service.

## Description

If you do not know what services are available, you can type ADD at the
LATCP prompt. LATCP listens for LAT service announcements for two
minutes. Then, LATCP displays a window from which you can select one
or more preferred services. LATCP saves the selections in DECLAT.DAT.
You can load the preferred services by restarting LAT after you exit
LATCP.

## Examples

1.  `LATCP> ADD 9.320 SAMPLE`

This example adds to DECLAT.DAT the preferred service SAMPLE, which
is on the host computer having the node address 9.320. If you do not know
the node address for a host computer, see your system administrator.

2.  `LATCP> ADD 08-00-2B-02-F2-BB MODEM_POOL`

This example adds the service MODEM_POOL to DECLAT.DAT. This
service is on the host computer having the Ethernet address 08-00-2B-02-
F2-BB.

3.  `LATCP> ADD`

```
Selections              Service        Address              Rating
                        LETTER         XX-XX-XX-XX-XX-XX     6
                        NUMBER         XX-XX-XX-XX-XX-XX     120

Listening for service announcements This takes about 2 minutes.
Press <SPACE> to stop listening.
```

This example shows what LATCP displays when you enter ADD without
parameters. LATCP displays a window from which you can select one or
more preferred services. Instructions for selecting preferred services are
displayed on the screen that follows the one displayed in this example.

LATCP saves the selections in DECLAT.DAT. You load the preferred
services into the LAT service table by restarting LAT after you exit
LATCP.

## Moving Preferred Services

The CONVERT command copies all of the LAT preferred services in
DECNODE.DAT to DECLAT.DAT. CONVERT also clears the LAT flag for
those nodes in DECNODE.DAT. Because LAT loads all of the preferred
services it finds in both files, there is no duplication of services between
DECNODE.DAT and DECLAT.DAT.

## Format

CONVERT

## Example

```
LATCP> CONVERT
```

This example copies all of the LAT preferred services in DECNODE.DAT
to DECLAT.DAT.

## Deleting Preferred Services

The DELETE command deletes LAT preferred services, which reduces the amount of memory used by the service table. If you specify a service name, that service is deleted from DECLAT.DAT.

If you do not specify a service name, LATCP displays a window containing all of the preferred LAT services. Any services that you select are deleted from DECLAT.DAT. You must exit LATCP and restart LAT to reload the preferred services. To restart LAT, enter:

```
C:\> LAT
```

After you restart LAT, the LAT service table is updated.

## Format

DELETE   *[servicename] [/ALL]*

## Parameters

*servicename*
Is the DECnet service name of the preferred service.

## Qualifiers

*/ALL*
Deletes all of the services in DECLAT.DAT.

## Examples

1.  `LATCP> DELETE SPECS`

This example deletes the service SPECS from DECLAT.DAT.

2.  `LATCP> DELETE`

```
Selections                 Service      Address           Rating
                           TOOLS        XX-XX-XX-XX-XX-XX  0
                           SPECS        XX-XX-XX-XX-XX-XX  0

Select an entry by moving to it with the cursor keys, and then pressing
<RETURN>. Selected entries are displayed in the left hand window. When you
are finished press <ESC>.
```

This example shows what is displayed when you use the DELETE
command without specifying a service name on the command line.

## Exiting LATCP

The EXIT command leaves the LATCP utility.

## Format
EXIT

## Example

```
LATCP> EXIT
```
This example leaves the LATCP utility.

## Getting Help

The HELP command displays information about the following commands:

- ADD
- CONVERT
- DELETE
- EXIT
- LIST
- SHOW
- UNLOAD
- ZERO

## Format

HELP   *[command]*

## Parameters

*command*
Is a valid LATCP command.

## Example

```
LATCP> HELP ZERO
The ZERO COUNTERS command sets all of the LAT counters to zero.
```

This example displays information about the ZERO COUNTERS
command.

## Displaying Preferred Services in DECLAT.DAT

The LIST SERVICES command displays the preferred services in DECLAT.DAT.

## Format

LIST SERVICES

## Example

```
LATCP> LIST SERVICES
Preferred Service        Ethernet Address
-----------------        ----------------
TOOLS                    XX-XX-XX-XX-XX-XX
PENCIL                   XX-XX-XX-XX-XX-XX
WRITE                    XX-XX-XX-XX-XX-XX
PEN                      XX-XX-XX-XX-XX-XX
```

This example displays the preferred services stored in DECLAT.DAT.

# Displaying LAT Characteristics

The SHOW CHARACTERISTICS command displays information about the operating characteristics of a LAT node.

## Format

SHOW CHARACTERISTICS

## Example

```
LATCP> SHOW CHARACTERISTICS
```

```
LAT Characteristics as of 15-Jun-89 10:30:10
Local server name                        = PC_AA000500D10
Active virtual circuits                  = 0
Active slot sessions                     = 0
Protocol version                         = 5
ECO level                                = 1
Circuit timer                            = 60 ms
Keep alive timer                         = 20 seconds
Retransmit timer                         = 1 seconds
Retransmit limit                         = 8
Enabled groups                           = 0 - 255 (all groups enabled)
Facility code (unused)                   = 0
PC LAT product type code                 = 15
Maximum number of slots on a circuit     = 10
Number of datalink buffers               = 1
Minimum datagram size                    = 1518 bytes
Minimum slot size                        = 255 bytes
Minimum attention slot size (unused)     = 0 bytes
```

This example displays the operating characteristics of LAT node.

# Displaying LAT Counters

The SHOW COUNTERS command displays the LAT counters.

## Format
SHOW COUNTERS

## Example

```
LATCP> SHOW COUNTERS
LAT Counters as of 15-Jun-89 10:30:45
Seconds since last zeroed            = 81759
Messages transmitted                 = 0
Messages received                    = 0
Messages retransmitted               = 0
Messages received out of sequence    = 0
Illegal messages received            = 0
Illegal slots received               = 0
Queue entry unavailable for receive  = 0
Transmit buffers unavailable         = 0
Invalid messages received            = 0
Invalid slots received               = 0
Invalid multicast messages           = 163
```

This example displays all of the LAT counters.

## Displaying Services in the Service Table

The SHOW SERVICES command displays the services stored in the LAT
service table.

When LAT is started, it loads preferred services from DECNODE.DAT
and DECLAT.DAT. Other services come from service announcements,
which are periodically sent to all nodes. However, if you disable LAT
multicast, LAT ignores the service announcements.

**NOTE**
You should never disable LAT multicast unless you have defined all
desired preferred services.

The SHOW /ALL command displays all the information displayed by
the three commands SHOW CHAR, SHOW COUNTERS, and SHOW
SERVICES. Pause the scrolling of the screen by pressing the space bar.

## Format

SHOW SERVICES

## Example

LATCP> SHOW SERVICES

```
Known LAT services as of 15-Jun-89 10:30:55
22 services offered by 18 nodes
Service Name     Rating  Node Name  Ethernet Address    Status
------------     ------  ---------  -----------------   ------
TOOLS               0    LETTER     XX-XX-XX-XX-XX-XX    Preferred service
PENCIL              6    LETTER     XX-XX-XX-XX-XX-XX    Available
WRITE             120    LETTER     XX-XX-XX-XX-XX-XX    Service not available
                         .
                         .
                         .
SPECS             120    MILTON     XX-XX-XX-XX-XX-XX    Host unreachable
```

This example displays the known services in the LAT service table. The
node name field is blank for services offered by a terminal server.

## Unloading LAT.EXE

The UNLOAD command stops any active LAT sessions and unloads the LAT program from conventional memory. Other programs can also unload LAT:

- MEMMAN /U unloads all network components (including LAT) from memory.

- SETHOST loads and unloads LAT as it is needed.

## Format

UNLOAD

## Example

LATCP> UNLOAD

This example stops active LAT sessions and unloads the LAT program.

## Zeroing LAT Counters

The ZERO COUNTERS command sets all of the LAT counters to zero.
This enables you to watch the counters when you are investigating a fault
with LAT.

For a list of LAT counters, see the SHOW COUNTERS command.

## Format

ZERO COUNTERS

## Example

LATCP> ZERO COUNTERS

This example sets all LAT counters to zero.

# 5

# The PCSA Memory Management Utility

The PCSA Memory Management Utility (MEMMAN) provides the functions necessary to display information about memory and to unload network components from memory.

MEMMAN supports the following functions through command line qualifiers:

• Displaying memory maps of installed components and free memory

• Displaying information about conventional, extended or expanded memory

• Unloading all network components from memory

## The MEMMAN Command Line Syntax

The MEMMAN utility has the following syntax:

```
MEMMAN [/qualifiers] [/modifying qualifiers]
```

Where:

| | |
|---|---|
| MEMMAN | Is the MEMMAN utility. |
| Qualifiers | Determine the action the MEMMAN utility performs. Table 5–1 lists all available qualifiers. |
| Modifying qualifiers | Modifies the action of a MEMMAN qualifier. Table 5–2 lists all available modifying qualifiers. |

**Table 5–1   MEMMAN Qualifiers**

| Qualifier | Description |
|---|---|
| /E | Displays detailed information on expanded memory. |
| /H | Displays usage information and qualifier summary. You can use /? in place of /H. |
| /M | Displays a DOS memory map. This is the default. |
| /S | Displays summary information on conventional, extended, and expanded memory. |
| /U | Unloads components from memory up to, and including, the PCSA Mark created with SAVE. |
| /X | Displays detailed information about extended memory. |

**Table 5–2   MEMMAN Modifying Qualifiers**

| Qualifier | Description |
|---|---|
| /B | Displays less detailed information. This is the default. |
| /F | Displays more detailed information. |
| /Y | Does not prompt you to confirm that you want to unload all components from memory. This qualifier is used only with the /U qualifier. |

# Invoking MEMMAN

To invoke MEMMAN, enter:

```
C:\> MEMMAN /qualifier  Return
```

The remainder of this chapter is organized into the following sections:

- Displaying information about expanded memory
- Displaying information about MEMMAN qualifiers
- Displaying information about DOS memory map usage
- Displaying information about all memory
- Unloading components from memory
- Displaying information about extended memory

# Displaying Information About Expanded Memory

To display information about expanded memory (EMS), use the
MEMMAN command with the /E qualifier. You must install a third-
party expanded memory manager, such as EMM.SYS, for this function to
work.

## Format
MEMMAN  /E

## Qualifiers

### /E
Displays information about expanded memory.

## Example

MEM /E

```
MEMMAN V3.0   PCSA Memory Management Utility
Copyright (c) 1989 by Digital Equipment Corporation

Expanded Memory Information

     EMM driver version          4.0
     EMM page frame address      E000
     Expanded memory size        333 pages (5328K)
     Expanded memory available    60 pages (960K)

     Handle  Pages    Size    Attributes   Handle Name
     ------  -----    ----    ----------   -----------
        0       40    640K    volatile     [noname]
        1      125   2000K    volatile     [noname]
        2      100   1600K    volatile     [noname]
        3        4     64K    volatile     DECnetR? [44 45 43 6E 65 74 52 02]
        4        4     64K    volatile     DECnetR? [44 45 43 6E 65 74 52 01]
```

This example displays detailed information about expanded memory.

The following table contains information about the fields displayed when you enter the /E qualifier.

| | |
|---|---|
| Driver version | Is the version of the EMM driver. |
| Page frame address | A page frame is a window through which expanded memory is accessed. The page frame address is the beginning address for the page frame. |
| Expanded memory size | Is the size of the expanded memory in pages and bytes. There are 16 Kbytes to a page. |
| Expanded memory available | Is the size of the available expanded memory. |
| Handle | Is an identifier used by an application to access a block of allocated expanded memory. |
| Page | Is the size of expanded memory in pages for a specific handle. There are 16 Kbytes to a page. |
| Size | Is the size of expanded memory in bytes for a specific handle. |
| Attributes | Are the characteristics of a handle's expanded memory. There is volatile and non-volatile expanded memory. |
| Handle name | Is the name an application assigns to a handle. Some handle names can contain non-printable characters. When this occurs, MEMMAN displays the handle name in hexadecimal. |

# Displaying Information about MEMMAN Qualifiers

To display information about MEMMAN qualifiers, use the MEMMAN
command with the /H qualifier.

## Format
MEMMAN   */H | /?*

## Qualifiers

*/H*
Displays information about MEMMAN qualifiers.

*/?*
Displays information about MEMMAN qualifiers.

## Example

MEMMAN /H

```
MEMMAN V3.0   PCSA Memory Management Utility
Copyright (c) 1989 by Digital Equipment Corporation

usage: MEMMAN [/F|/B|/Y] [/M|/S|/H|/U|/E|/X]
where: /F   Maximum verbosity
       /B   Minimum verbosity (default)
       /Y   Do not prompt with /U
       /S   Summary report of all memory
       /M   DOS memory usage map (default)
       /H   This help summary
       /E   Detailed expanded memory information
       /X   Detailed extended memory information
       /U   Unload network
```

This example displays summary information about all qualifiers.

# Displaying Information About DOS Memory Map Usage

To display information about DOS memory map usage, use the MEMMAN command with the /M qualifier. MEMMAN /M displays the following information:

- The address or ID for a process

- The number of bytes a process or component occupies in memory

- The owner of a block of memory

- The command line, which can contain:

  — All or a portion of the command line that started the process

  — <ENVIRONMENT>, which means that the memory is part of another process.

  — <DATA>, which means that the memory is data for a process

- Hooked interrupts, which are interrupts that a component takes over

## Format
MEMMAN   *[/M] [/F]*

## Qualifiers

*/M*
Displays information about DOS memory map usage.

*/F*
Displays information about DOS memory map usage, plus memory allocated by MS-DOS and CONFIG.SYS.

## Examples

1.  MEMMAN /M

```
MEMMAN V3.0   PCSA Memory Management Utility
Copyright (c) 1989 by Digital Equipment Corporation

PSP     Bytes  Owner          Command Line             Hooked Interrupts
0D57     3376  COMMAND.COM                              22-24 2E
free       48
0D57      512  COMMAND.COM    <ENVIRONMENT>
free      304
free       80
0E6A     1136  PCSA Mark
0EB2     8784  LAST           /n:letter /m:d /c:e      69
10D8     5664  LAD            /A:e /R:12 /W:15         13 EC
123B    61456  DNP/NETBIOS    /fc:0 /i2a:Y /lan:0      2A 5C 6E
free   584752
```

This example displays a brief memory map of all conventional memory.

The following table contains information about the fields displayed when
you enter the /M qualifier.

| | |
|---|---|
| **PSP** | Is the process address or ID. |
| **Bytes** | Is the size of the block of memory. |
| **Owner** | Is the process that owns the memory. |
| **Command line** | Is one of the following: |
| | All or a portion of the command line that started the process. |
| | <ENVIRONMENT>, which means that the memory is part of another process. |
| | <DATA>, which means that the memory is data for a process. |
| **Hooked interrupts** | Are interrupts that a component takes over.  For example, session has taken control of interrupts 2Ah, 5Ch and 6E. |

2.  MEMMAN /M /F

```
MEMMAN V3.0   PCSA Memory Management Utility
Copyright (c) 1989 by Digital Equipment Corporation

PSP     Bytes  Owner        Command Line               Hooked Interrupts
0008    40912  MS-DOS                                  01 03-04 18 20 25-28 2B-2D
                                                       31-3F F1 F3-F4 F6 FC-FD
0008    13696  CONFIG.SYS                              15 67
0D57     3376  COMMAND.COM   /f                        22-24 2E
free       48
0D57      512  COMMAND.COM   <ENVIRONMENT>
free      304
free       80
0E6A     1136  PCSA Mark
0EB2     8784  LAST          /n:riddle /m:d /c:e        69
10D8     4832  LAD           /A:e /R:15 /W:15           13 EC EF
1207    61376  DNP/NETBIOS   /fc:0 /i2a:Y /lan:0        2A 5C 6E
free   585664
```

This example displays a memory map of all conventional memory, plus
memory allocated by MS-DOS and CONFIG.SYS.

## Displaying Information About All Memory

To display information about all memory, use the MEMMAN command
with the /S qualifier. MEMMAN /S displays the following information:

- Physical conventional memory; the number of bytes reported and
  available

- Physical extended memory; the number of bytes and their status

- Expanded memory; the number of bytes and what is available

The type workstation you are using determines the number of fields that
the MEMMAN /S command displays.

## Format

MEMMAN   /S [/F]

## Qualifiers

### /S
Displays information about all memory.

### /F
Displays information about all memory, plus information about all
installed adapter RAM and ROM.

## Examples

1. `MEMMAN /S`
   ```
   MEMMAN V3.0   PCSA Memory Management Utility
   Copyright (c) 1989 by Digital Equipment Corporation

   Memory Usage Summary

        DOS memory allocation scheme     first fit

        Physical conventional memory     640K
        Reported conventional memory     704K
        Available conventional memory    645K
   ```

```
Physical extended memory       5120K
Reported extended memory         0K

Expanded memory size           5328K
Expanded memory available       960K

XMS extended memory available    64K
Largest available EMB            64K
```

This example displays all information about conventional, expanded, and extended memory on the workstation.

2. MEMMAN /S /F

```
MEMMAN V3.0   PCSA Memory Management Utility
Copyright (c) 1989 by Digital Equipment Corporation
```

Memory Usage Summary

```
DOS memory allocation scheme     first fit

Physical conventional memory     640K
Reported conventional memory     704K
Available conventional memory    645K

Physical extended memory        5120K
Reported extended memory          0K

Expanded memory size            5328K
Expanded memory available        960K

XMS extended memory available     64K
Largest available EMB             64K
```

Adapter memory scan between A000 and F000

```
RAM found at A000 to AFFF  (64K)
RAM found at B000 to BFFF  (64K)
RAM found at C000 to CFFF  (64K)
RAM found at D000 to DC00  (48K)
ROM found at DC00 to DFFF  (16K)
```

This example displays all information about conventional, expanded, and extended memory on the workstation, plus information about all installed adapter RAM and ROM.

# Unloading Components From Memory

To unload all components from memory up to, and including, the PCSA
Mark, use the MEMMAN command with the /U qualifier. By unloading
all of the components, you increase your available memory for running
local applications. After the components are unloaded, you cannot use the
network. When you finish your local application, you can reload any or all
network components without rebooting you workstation.

The PCSA Mark is the reference point after which the current system
context is saved. STARTNET.BAT creates the PCSA Mark.

## Format

MEMMAN   /U [/F] [/Y]

## Qualifiers

*/U*

Unloads components from memory up to, and including, the PCSA Mark.

*/F*

Displays information about the context stored in the PCSA Mark and
memory about to be released.

*/Y*

Specifies that you do not want to be prompted for confirmation when
unloading components from memory.

Use this qualifier cautiously. Because MEMMAN does not prompt you
to confirm the unload, you cannot stop the unload if active network links
are detected. Errors can occur if MEMMAN unloads the network while
connections are still active.

## Examples

1. `MEMMAN /U`
   ```
   MEMMAN V3.0   PCSA Memory Management Utility
   Copyright (c) 1989 by Digital Equipment Corporation

   Approximately 77040 bytes of memory will be released

   OK to proceed? [NO]:Y
   ```

   This example prompts you to confirm the unloading of all components up to, and including, the PCSA Mark. Press Y to proceed. Press N and Return to stop without unloading components from memory.

2. `MEMMAN /U /F`

   ```
   MEMMAN V3.0   PCSA Memory Management Utility
   Copyright (c) 1989 by Digital Equipment Corporation

   PCSA Mark 1 found at PSP 0E6A

   Restoring context from PCSA Mark 1 at PSP 0E6A

   The following memory will be released:
       Block 0E69 length 1136 bytes owned by PSP 0E6A (PCSA Mark program)
       Block 0EB1 length 8784 bytes owned by PSP 0EB2 (LAST program)
       Block 10D7 length 4832 bytes owned by PSP 10D8 (LAD program)
       Block 1206 length 61376 bytes owned by PSP 1207 (DNP/NETBIOS program)

   Approximately 76128 bytes of memory will be released

   OK to proceed? Y
   ```

   This example displays information about the amount of memory to be freed and prompts you to confirm the unloading of all components up to, and including, the PCSA Mark. Press Y and Return to proceed. Press N and Return to stop without unloading components from memory.

# Displaying Information About Extended Memory

To display information about extended memory, use the **MEMMAN**
command with the **/X** qualifier.

## Format

MEMMAN   /X

## Qualifiers

*/X*

Displays information about extended memory.

## Example

```
MEMMAN /X
MEMMAN V3.0    PCSA Memory Management Utility
Copyright (c) 1989 by Digital Equipment Corporation

Extended Memory Information

    XMS driver version        2.00 (revision 2.06)
    High memory area          allocated
    Driver API entry point    0A6E:00C9
    A20 line status           disabled
    Extended memory available   64K
    Largest available EMB       64K
    Available EMB handles     32
```

This example displays detailed information about extended memory. You
must install an extended memory manager, such as HIMEM.SYS, for this
function to work.  To install HIMEM.SYS, add the following line to your
CONFIG.SYS file:

```
DEVICE=HIMEM.SYS
```

# 6

# Other PCSA Network Commands

This chapter describes the remainder of the workstation commands
you can use to set up and manage services on a PCSA network. The
discussion of each command includes a general description, the format
with required and optional qualifiers and their default values, and at
least one example of the command.

Table 6–1 lists the network commands and their functions.

**Table 6–1   PCSA Network Commands**

| Command | Function |
|---|---|
| EMSLOAD | Loads selected network client components into expanded memory. |
| LOGIN | Connects a workstation to a personal service and runs the AUTOUSER.BAT file. |
| NET ATTRIB | Displays, specifies, or changes the VMS access control list or UIC protection of remote files. |
| NET CLEAR | Removes server names. |
| NET CONTINUE | Resumes network connections that are stopped. |
| NET CREATE | Creates a virtual disk on a VMS server. |
| NET DEFINE | Defines a DECnet node name and node address for a file or print server. |
| NET DELETE | Deletes a virtual disk on a VMS server. |
| NET DISK SERVICES | Displays the virtual disks offered by a server or servers. |
| NET DISMOUNT | Makes the virtual disk unavailable to your workstation or other workstations. |
| NET ERROR | Displays the error statistics for virtual disks and DECnet. |

**Table 6–1 (Cont.)   PCSA Network Commands**

| Command | Function |
|---|---|
| NET FILE SERVICES | Displays file and printer services available on a file server. |
| NET HELP | Displays help on command syntax and usage. |
| NET LIST | Displays a list of DECnet nodes defined in the workstation node database. |
| NET LOAD | Restores network connections saved using the NET SAVE command. |
| NET MODIFY | Changes the virtual disk file allocation, the number of simultaneous connections to the virtual disk, or the password of the virtual disk. |
| NET MOUNT | Makes an existing virtual disk available to your workstation or other workstations. |
| NET PASSWORD | Changes the password of a VMS account on a file server. |
| NET PAUSE | Stops temporarily your network connection. (Use the NET CONTINUE command to resume use.) |
| NET SAVE | Saves the current network connections to a context file. |
| NET TEST | Tests whether the remote node is available for connections. |
| NET TIME | Gets the date and time from a node. |
| NET ZERO LAD | Clears the error counters for the virtual disk. |
| PERMIT | Offers a single session, single connection file server. |

# EMSLOAD: Loading Selected Network Components into Expanded Memory

To load selected network components into expanded memory, use the EMSLOAD command.

With EMSLOAD, you can load LAD, LAST, LAT, and RCV into expanded memory, thus saving the 640-Kbyte main memory for other MS-DOS programs.

## Format

EMSLOAD   *component [qualifiers]*

## Parameters

*component*
Is the network component you want to load (LAD, LAST, LAT, RCV).

*qualifiers*
Specifies the qualifiers for the component you want EMSLOAD to load.

## Example

```
E:\> EMSLOAD LAT /D:80 /R:30
```

This example loads LAT into expanded memory with a terminal services directory size of 90 (80 plus the default size of 10), and a maximum number of 30 retransmissions for each data packet.

## LOGIN: Connecting Your Workstation to Your Personal Directory

To connect your workstation to your personal directory on the server and run your user profile, use the LOGIN command. You can use the LOGIN command to copy your user profile to your personal directory. After a successful connection, the LOGIN command automatically runs your AUTOUSER.BAT file.

Because the LOGIN command runs automatically when you start your workstation, you usually don't have to worry about the connection to your personal directory. However, if you start your workstation, and the server where your personal directory is located is not accepting connections, you must run the LOGIN command to access your personal directory.

**NOTE**
If you try to connect to your personal directory, and are continually refused connection, see your system administrator.

## Format
LOGIN
LOGIN   *node username [password | *] /V*

## Parameters

*node*
Is the DECnet node to which you want to connect.

*username*
Is your user name for your personal account on the server.

*password*
Is a password.

*

Prompts you for a password.

## Qualifiers

### /V

Specifies that you are connecting to your personal account on a virtual disk.

## Example

```
A:\> LOGIN SERVER ARTIST * /V
Password:
```

This example displays the password prompt and connects to the personal directory ARTIST on node SERVER.

# NET ATTRIB: Setting and Showing VMS File Protection

To protect files on a VMS server from VMS users and PCSA clients, use the NET ATTRIB command. The NET ATTRIB command sets or shows VMS file protection; to set and show DOS file protection, use the DOS ATTRIB command.

Using the NET ATTRIB command, you can change:

- Access control list (ACL) protection
- User identification code (UIC) protection

Changing ACL and UIC protection are both discussed in the following sections. Also discussed is displaying ACL and UIC protection.

# Changing ACL Protection

Using the NET ATTRIB command, you can create or change the VMS
access control list (ACL) for a user or a list of users. The ACL contains
identifiers, which can be a general identifier, a UIC, or a system identifier.
If you do not know which identifiers to use, see your VMS system
administrator. Each identifier in the ACL is an access control entry
(ACE), and has access rights associated with it.

## Format

NET ATTRIB   *drv:[\path\]filename.ext [identifiers]*

$$\begin{bmatrix} [/QUERY] \\ [/ACCESS=rights] \\ [/BOTTOM] \\ [/REMOVE] \end{bmatrix}$$

## Parameters

### *drv:*
Is the drive where the specified file is located. You must specify a drive
connected to a file server.

### *path*
Is the path to the directory where the specified file is located.

### *filename.ext*
Is the file name and file extension of the file whose ACL you want to
create or change. You can use wildcards.

### *identifiers*
Is one to three VMS identifiers separated by spaces or plus signs. You
can enter up to three identifiers: one UIC, one general identifier, and one
system-defined identifier. If you do not know the identifiers available on
your VAX server, see your system administrator.

## Qualifiers

### /QUERY
Prompts you for the qualifiers you do not specify.

### /ACCESS=option
Is the access allowed for the identifier.

| | |
|---|---|
| READ | For read access |
| WRITE | For read and write access |
| NONE | For no access |

### /BOTTOM
Adds the specified ACE to the bottom of the ACL. When an ACL is scanned to determine the access rights, the ACE closest to the top of the ACL takes effect. By default, ACEs are always added to the top of the ACL.

### /REMOVE
Removes the ACE from the ACL. To remove multiple ACEs, use the NET ATTRIB command with the remove qualifier for each ACE.

## Examples

1.  `D:\> NET ATTRIB D:\TEST.DAT JONES /ACCESS=READ`

This example adds an ACE to the top of the ACL for user Jones. Because the ACL is read from the top, JONES has read access to the file TEST.DAT.

2.  `D:\> NET ATTRIB D:\TEST.DAT PYROGENICS /REMOVE`

This example removes the identifier PYROGENICS from the ACL for the file TEST.DAT. Thus, users with only the identifier PYROGENICS cannot access the file TEST.DAT.

3.  `D:\> NET ATTRIB D:\TEST.DAT [300,*] /ACCESS=READ /BOTTOM`

This example gives read access for the UIC = [300,*] to the file TEST.DAT and inserts the ACE at the bottom of the ACL.

**4.** `D:\> ` `NET ATTRIB D:\TEST.DAT`

```
\TEST.DAT              (System:RWED,Owner:R,Group,World)
Identifier                     Access
----------                     ------
[200,JONES]                    READ
POOLPLAYERS                    READ
PODIATRISTS                    READ
PSYCHOLOGISTS                  WRITE
[3N9,*]                        READ
[300,*]                        READ
```

This example displays the ACL for TEST.DAT. A user with identifier
PSYCHOLOGISTS and group UIC [3N9,*] could access TEST.DAT with
WRITE privileges, because the ACL is read from top to bottom. The
identifier PSYCHOLOGISTS precedes the UIC [3N9,*]. Similarly, user
JONES with identifier PSYCHOLOGISTS could access TEST.DAT with
READ privileges only.

## Changing UIC Protection

Using NET ATTRIB, you can change the VMS protection codes for one
or more files. The VMS operating system uses user identification codes
(UICs) to assign authorization. You can also set a default UIC protection
code to be used whenever a new file is created.

## Format

NET ATTRIB    *drv:[\path\] [/PROTECTION=(code)] [/QUERY]*
NET ATTRIB    *drv:[\path\] [/PROTECTION=(code)] [/DEFAULT]*

## Parameters

*drv:*
Is the drive where the specified file is located. You must specify a drive
connected to a file server.

*path*
Is the path to the directory where the specified file is located.

*filename.ext*
Is the file name and file extension of the file whose VMS protection code
you want to change. You can use wildcards.

## Qualifiers

*/PROTECTION=(code)*
Is the UIC file protection. Specify the protection code in the same format
as that of the VMS SET PROTECTION command. Valid protection codes
are abbreviated: R (Read), W (Write), E (Execute), and D (Delete). Choose
the protection code (R,W,E,D) for each type of ownership (System, Owner,
Group, and World). Use the following format to enter a protection code:

(S:RWED,O:RWED,G:RWED,W:RWED)

You can disable access by not specifying an entry after the type of
ownership. For example, to disable system access, enter:

/PROTECTION=(S:)

*/QUERY*
Prompts you for all qualifiers you do not specify.

## /DEFAULT

Changes the protection for all new files you create or modify on the
drive you specify to the default protection. The /DEFAULT qualifier does
not change the protection on files that existed before you ran the NET
ATTRIB command. For example, you could set the default protection to
(S:RWED,O:RWE).

# Examples

1. `D:\> NET ATTRIB TEST.DAT /PROT=(O:R,G:,W:)`

This example changes the protection for the file TEST.DAT to give the
owner read access and gives the group and world no access to TEST.DAT.

2. `D:\> NET ATTRIB D:\BIN\*.* /PROT=(W:RWED)`

This example changes the access for all files in the directory D:\BIN to
read, write, execute, and delete access for world.

3. `D:\> NET ATTRIB \BIN /PROT=(O:RW)`

This example changes the access for the directory D:\BIN to read and
write for owner.

4. `D:\> NET ATTRIB D:METAL.DOC`

   `\METAL.DOC           (System:RWED,Owner:RWED,Group:RW,World:R)`

   `Command completed successfully.`

   `D:\> NET ATTRIB D: /PROT=(O:RW,G:,W:) /DEFAULT`

   `Command completed successfully.`

   `D:\> NET ATTRIB D:METAL.DOC`

   `\METAL.DOC           (System:RWED, Owner:RWED, Group:RW, World:R)`

   `Command completed successfully.`

   `D:\> SEDT METAL.DOC`

   `D:\> NET ATTRIB METAL.DOC`

   `\METAL.DOC           (System:RWED, Owner:RW, Group:, World:)`

   `Command completed successfully.`

   `D:\>`

In this example, the first NET ATTRIB command displays the VMS
protection for METAL.DOC.

The second NET ATTRIB command, with the /DEFAULT qualifier, sets the default VMS protection for any newly created or modified files.

The third NET ATTRIB command displays the VMS protection for METAL.DOC. The protection for METAL.DOC remains the same.

The fourth NET ATTRIB command displays the VMS file protection for METAL.DOC after it was edited using the SEDT editor. The protection for METAL.DOC is now the default protection set with the second NET ATTRIB command.

## Displaying ACL or UIC File Protection

Use the NET ATTRIB command to display ACL and UIC file protections.
The NET ATTRIB command displays system, UIC, and general identifiers,
and does not display application, security, or hidden ACE entries.

## Format

NET ATTRIB   *[file]*

## Parameters

*file*
Is an MS-DOS file specification. You must include a drive letter and can
include a path, file name, extension or wildcards. Wildcard specifications
(*.*) are interpreted as MS-DOS wild cards, not as VMS wild cards.

## Examples

1. `D:\> NET ATTRIB D:\TEST.DAT`

   ```
   TEST.DAT            (System:RWED, Owner:RWED, Group:R, World:R)

   Identifier                      Access
   ----------                      ------
   POOLPLAYERS                     WRITE
   PODIATRISTS                     READ
   PSYCHOLOGISTS                   WRITE
   PYROGENICS                      READ
   ```

   This example shows the UIC protection and the contents of the ACL for
   the file D:\TEST.DAT.

**2.** `D:\> `<span style="color:red">`NET ATTRIB D:\BIN\*.*`</span>

```
CHROMIUM.DOC       (System:RWED, Owner:RWED, Group:RWED, World:R)

Identifier                         Access
----------                         ------
METALLIC                           READ
STEEL-GREY                         WRITE


YTTERBIUM.DOC      (System:RWED, Owner:RWED, Group:RWED, World:)

Identifier                         Access
----------                         ------
RARE_EARTH                         READ
SILVERY_GREY                       WRITE
```

This example shows the UIC file protection and the contents of the ACL
for all the files in the directory D:\BIN.

# NET CLEAR: Removing DECnet Node Names from DECNODE.DAT

To remove DECnet node names from the DECNODE.DAT file on the
network key disk, use the NET CLEAR command. These names are
used by the USE command to connect to file and printer services.
The NET CLEAR command removes the specified DECnet node name,
which saves space. However, after the node name is removed from the
DECNODE.DAT file, there is no longer any access control information
available for that node. If you try to connect to the node, you must specify
a user name and password.

## Format

NET CLEAR   *node*

## Parameters

*node*
Is the DECnet node name you want to remove from the DECNODE.DAT
file.

## Example

```
A:\> NET CLEAR HOBBIT
```

This example removes the DECnet node name HOBBIT from the
DECNODE.DAT file. This removes all access control information from
DECNODE.DAT; anyone connecting to the server HOBBIT must supply a
user name and password.

# NET CONTINUE: Restarting File or Printer Services

To restart file or printer services after they have been temporarily
suspended with the NET PAUSE command, use the NET CONTINUE
command.

## Format

NET CONTINUE   *DRDR | PRDR*

## Parameters

*DRDR*
Resumes all file services.

*PRDR*
Resumes all network printer services.

## Example

`A:\>` NET CONTINUE PRDR

This example uses the network printer as you did before you issued the
NET PAUSE command.

# NET CREATE: Creating and Formatting a Virtual Disk

To create and format a virtual disk, use the NET CREATE command. A virtual disk must be created and formatted before you can mount it and use it. The virtual disk is actually a VMS container file that DOS users access as though it were a DOS disk. The virtual disk cannot exceed the VMS disk quota and must be created in an area for which you have write access.

When the NET CREATE command creates a virtual disk, it automatically formats the virtual disk according to the /SIZE qualifier.

To ensure security, use a node name and password when creating a disk service.

**NOTE**
To create a virtual disk, you must have write access privileges on the default device and in the directory where the corresponding logical points. See the /TYPE qualifier for the list of corresponding logicals.

## Format

NET CREATE    \\\node[%username] [password | *]
$$\begin{bmatrix} \text{[/ALLOC=n]} \\ \text{/FILE=file-spec} \\ \text{[/QUERY]} \\ \text{[/SIZE=n]} \\ \text{[/TYPE=class]} \end{bmatrix}$$

## Parameters

*node*
Is the DECnet node name of the server on which the virtual disk is created.

*username*
Is the user name for the VMS account used when creating a virtual disk. The default user name and password are contained in the DECALIAS.DAT file for your node. If the DECALIAS.DAT file does not contain a default user name and password, you are prompted for them.

### password
Is the password associated with user name.

### *

Prompts you for a password.

# Qualifiers

### /ALLOC=n
Is the number of blocks the virtual disk occupies in the VMS container
file. The number you set for allocation depends on the size specified with
the /SIZE qualifier and must be between the minimum and maximum
values specified in Table 6–2:

**Table 6–2   VMS Container File Sizes for Virtual Disks**

| /SIZE | Minimum Allocation | Maximum Allocation |
|-------|--------------------|--------------------|
| 360 Kbyte | 12 blocks | 720 blocks |
| 720 Kbyte | 14 blocks | 1440 blocks |
| 1.2 Mbyte | 29 blocks | 2400 blocks |
| 1.44 Mbyte | 33 blocks | 2880 blocks |
| 5 Mbyte | 66 blocks | 10240 blocks |
| 10 Mbyte | 16344 blocks | 20480 blocks |
| 20 Mbyte | 16344 blocks | 40960 blocks |
| 32 Mbyte | 16344 blocks | 65535 blocks |

### /FILE=file-spec
Is the VMS file specification for the virtual disk. You can use the /FILE
qualifier with the /TYPE qualifier to avoid entering the full VMS file
specification, which has the following format:

```
DEVICE:[USERNAME.SUBDIR]FILENAME.EXT.
```

The default file extension for a virtual disk is .DSK. To specify the directory for the virtual disk, you can:

- Explicitly state the directory for the virtual disk in the file specification.

- Use the /TYPE qualifier to select the location of the virtual disk.

- Use the default /TYPE qualifier and specify only the file name.

## /QUERY
Prompts you for the parameters you do not specify.

## /SIZE=n
Is the maximum size of the virtual disk. Specify 360KB, ,720KB, 1.2MB, 1.44MB, 5MB, 10MB, 20MB, or 32MB for n (see Table 4-2. The default is 10MB for a system disk and 1.2MB for application, boot, and user disks.

## /TYPE=class
Determines the default device and directory for the virtual disk. The default device and directory are represented by a logical. Specify one of the following classes:

| Class | Corresponding Logical | Privileges Needed |
| --- | --- | --- |
| SYSTEM | LAD$SYSTEM_DISKS | Write access |
| BOOT | LAD$BOOT_DISKS | Write access |
| APPLICATION | LAD$APPLICATION_DISKS | Write access |
| USER | SYS$LOGIN | Write access |

SYS$LOGIN is the root of your VMS account. For more information about these logicals, see the *Server Administration with Commands*. The default class is USER.

Use the /TYPE=BOOT qualifier to create a network key disk.

## Examples

1.  `C:\> NET CREATE \\GALAXY%JONES /F=[.DISKS]JONES.DSK *`
    `/S=10MB /T=USER`
    `Password:`

This example creates a 10 Mbyte user virtual disk using the file with the
specification GALAXY::[JONES.DISKS]JONES.DSK with a user name
JONES on node GALAXY.

2.  `C:\> NET CREATE \\STAR%JONES /F=[.DISKS]JONES.DSK * /S=32MB`

This example creates a 32 Mbyte virtual disk using the file with the
specification STAR::[JONES.DISKS]JONES.DSK with a user name
JONES on node STAR.

3.  `C:\> NET CREATE \\GALAXY /FILE=JONES.DSK`

This example creates a 1.2 Mbyte virtual disk using the file with a file
name JONES.DSK on node GALAXY using the default access information
for node GALAXY stored in the file DECALIAS.DAT.

4.  `C:\> NET CREATE \\GALAXY /Q`

```
Where should it be stored? (VMS  filespec): FLOWER.DSK
What type of disk? (application, boot, system, user):USER
How big a disk? (360KB, 720KB, 1.2MB, 1.44MB, 5MB, 10MB, 20MB, 32MB):10MB
Allocate space for the entire disk? (y/n):Y
Okay to continue? (y/n):Y
```

This example creates a 10 Mbyte virtual disk using the default access
information and the /Q qualifier causes the NET CREATE command to
prompt you for the qualifiers.

# NET DEFINE: Assigning a DECnet Node Name

To add the DECnet node name and node address to DECNODE.DAT of a node that is outside your LAN, use the NET DEFINE command. This command also automatically sets the MS-NET flag, which indicates that the specified node is a part of the PCSA network.

NET DEFINE also adds the node name and node address to the session layer's *non-permanent database* of servers, if the database is not full. A non-permanent database contains information that is lost when the client is rebooted.

## Format

NET DEFINE    *name address*

## Parameters

*name*
Is the DECnet name to be associated with the node address.

*address*
Is the DECnet address of the node being defined.

## Example

```
A:\> NET DEFINE MADRID 2.65
```

This example assigns the DECnet node name MADRID to the DECnet node address 2.65. NET DEFINE adds the node information for MADRID into DECNODE.DAT. NETBIOS adds the node information to the session layer's volatile database of servers, if it is not full. Users on the PCSA network can connect to services on the node MADRID.

# NET DELETE: Deleting a VMS Virtual Disk

To delete a virtual disk from a VMS server, use the NET DELETE
command. You must use the NET DISMOUNT command before running
the NET DELETE command.

**NOTE**
To delete a virtual disk, you must have write access privileges on the
default device and in the directory where the corresponding logical points.
See the /TYPE qualifier for the list of corresponding logicals.

## Format
NET DELETE   \\node[%username] [password | *]
$$\left[ \begin{array}{l} \text{/FILE=file-spec} \\ \text{[/QUERY]} \\ \text{[/TYPE=class]} \end{array} \right]$$

## Parameters

*node*
Is the DECnet node name of the server on which the virtual disk is stored.

*username*
Is the name of the VMS account used when deleting the virtual disk.
If you do not specify a user name, the system searches for a user
name and password for that node in the DECALIAS.DAT file. If the
DECALIAS.DAT file does not contain a default user name and password,
you are prompted for them.

*password*
Is the password of the VMS account.

*

Prompts you for a password.

## Qualifiers

### /QUERY
Specifies that you want to be prompted for all the qualifiers.

### /FILE=file-spec
Is the VMS file specification for the virtual disk. You can use the /FILE
qualifier with the /TYPE qualifier to avoid entering the full VMS file
specification, which has the following format:

```
DEVICE:[USERNAME.SUBDIR]FILENAME.DSK
```

The default file extension for a virtual disk is .DSK.

To specify the directory for the virtual disk, you can:

* Explicitly state the directory for the virtual disk in the file
  specification

* Use the /TYPE qualifier to select the location of the virtual disk

* Use the default /TYPE qualifier and specify only the file name

### /TYPE=class
Determines the default device and directory for the virtual disk. The
default device and directory are represented by a logical. Specify one of
the following classes:

| Class | Corresponding Logical | Privileges Needed |
|---|---|---|
| SYSTEM | LAD$SYSTEM_DISKS | Write access |
| BOOT | LAD$BOOT_DISKS | Write access |
| APPLICATION | LAD$APPLICATION_DISKS | Write access |
| USER | SYS$LOGIN | Write access |

SYS$LOGIN is the root of your VMS account. For more information about
these logicals, see your *VMS System Manager's Manual*. The default class
is USER.

Use the /TYPE=BOOT qualifier to delete a network key disk.

# Example

```
C:\> NET DELETE \\GALAXY%JONES * /F=JONES.DAT
Password:
```

This example deletes the virtual disk file JONES.DSK on node GALAXY.

# NET DISK SERVICES: Displaying Disk Services

The NET DISK SERVICES command is divided into the following
sections:

- Listing the virtual disk services offered by a node

- Listing the nodes offering a specific virtual disk service

# Listing Disk Services Offered by a Node

To list the disk services offered by a node, use the NET DISK SERVICES command. This command displays:

- Service name
- Type (User, Application, Boot, System)
- Server
- Limit of connections allowed
- Users
- Access (Read, Write, None)
- Rating
- Status (permanent or temporary)

| Status | Meaning |
|--------|---------|
| MNT | The virtual disk is mounted. |
| PERM | The virtual disk is mounted permanently. |
| | A virtual disk can be mounted permanently or temporarily. When mounted permanently, the virtual disk mounts every time the server is rebooted. When mounted temporarily, the virtual disk is available only until the server is rebooted. |
| PEND | The virtual disk is mounted on one node and waiting to be mounted on another node. |
| DSMNT | The virtual disk is currently dismounted. |

When the status of a virtual disk is displayed as mounted and pending, the virtual disk is mounted with write access on one node and another node is trying to mount it with read access.

To pause the display from the NET DISK SERVICES command, use Ctrl/S and Ctrl/Q, or pipe the output through the DOS MORE command.

## Format

NET DISK SERVICES    \\*node*%*username [password | *]*

## Parameters

### *node*
Is the DECnet node name of the disk server. You must specify the name
of a disk server.

### *username*
Is the user name for the VMS account that gives you access to the disk
server.

### *password*
Is the password for the VMS account.

### *
Prompts you for the password.

## Example

```
C:\> NET DISK SERVICES \\STAR%JONES *
Password:

USE Version 3.0 PCSA Network Connection Manager

Service Information for \\STAR%JONES

Disk Server Services:

Service name Type Server Limit Users Acc Rating Status
------------ ---- ------ ----- ----- --- ------ ------
XX-XX-XX-XX-XX-XX
             USER STAR      1      0 RO       0 MNT PERM
BIGDISK      USER STAR      1      0 RW       1 MNT PERM
```

This example displays the disk services available on node STAR to user
JONES.

# Listing Nodes Offering a Specific Disk Service

To list nodes offering a specific service, use the NET DISK SERVICES command. This command displays:

- Node

- Rating

  The rating is a measure of the priority of a service. The value is used by the client software for the virtual disk, LAD.EXE. The valid range is 1 through 65,535. The default is 1.

- Write (whether write access is allowed)

- Password (whether a password is specified)

- Ethernet address of the server

To pause the display from the NET DISK SERVICES command, use Ctrl/S and Ctrl/Q, or pipe the output through the DOS MORE command.

## Format

NET DISK SERVICES   *service*

## Parameters

*service*
Is the name of the disk service you are displaying.

# Example

```
C:\> NET DISK SERVICES VXSYS
```

```
USE Version 3.0 PCSA Network Connection Manager

Service Information for VXSYS

          Service  Password Access Maximum  Current
Node Name Rating   Required Mode   Connects Connects Network Address
--------- ------   -------- ----   -------- -------- ---------------
SUGAR     255      No       RO     No Limit 9        XX-XX-XX-XX-XX-XX
ASTER     1        No       RO     No Limit 8        XX-XX-XX-XX-XX-XX
ORANGE    1        No       RO     30       0        XX-XX-XX-XX-XX-XX
STAR      1        No       RO     No Limit 0        XX-XX-XX-XX-XX-XX
```

This example displays the nodes that offer the disk service VXSYS.

# NET DISMOUNT: Dismounting a Virtual Disk

To make a virtual disk unavailable for use on the network, use the NET
DISMOUNT command. You must run the NET DISMOUNT command to
dismount a virtual disk before you can delete it.

**NOTE**
To dismount a virtual disk, you must have write access privileges on the
default device and in the directory where the corresponding logical points.
See the /TYPE qualifier for the list of corresponding logicals.

## Format

NET DISMOUNT    *[drv:] \\node\service[%username]*
                *[password | *]*
                ⎡  *[/CLUSTER]*      ⎤
                ⎢  *[/QUERY]*        ⎥
                ⎢  *[/TEMPORARY]*    ⎥
                ⎣  *[/TYPE=class]*   ⎦

## Parameters

*drv:*
Is the logical drive identification for the virtual disk. If you specify a
drive, the client is disconnected from the drive.

*node*
Is the DECnet node name of the server from which the virtual disk is to
be dismounted.

*service*
Is the name of the disk service you are dismounting.

*username*
Is the user name for the VMS account used to access the virtual disk. The
default user name and password are contained in the DECALIAS.DAT file
for your client. If the file DECALIAS.DAT does not contain a default user
name and password, you are prompted for them.

*password*
Is the password for the VMS account.

*

Prompts you for a password.

## Qualifiers

### /CLUSTER
Dismounts the virtual disk on each available server in a cluster. The default is to dismount the virtual disk on the specified server.

### /QUERY
Prompts you for all the qualifiers.

### /TEMPORARY
Dismounts the virtual disk until the server reboots. The default is to dismount the virtual disk permanently.

### /TYPE=class
Determines the default device and directory for the virtual disk. The default device and directory are represented by a logical. Specify one of the following classes:

| Class | Corresponding Logical | Privileges Needed |
|---|---|---|
| SYSTEM | LAD$SYSTEM_DISKS | Write access |
| BOOT | LAD$BOOT_DISKS | Write access |
| APPLICATION | LAD$APPLICATION_DISKS | Write access |
| USER | SYS$LOGIN | Write access |

SYS$LOGIN is the root of your VMS account. For more information about these logicals, see the *Server Administration with Commands*. The default class is USER.

Use the /TYPE=BOOT qualifier to dismount a bootable virtual disk.

# Example

```
C:\> NET DISMOUNT D: \\ROAD\MAP%JONES * /QUERY
Password:

What type of disk? (application, boot, system, user): USER

Permanently dismount the disk? (y/n): Y

Dismount the disk for the entire cluster? (y/n): Y

Okay to continue? (y/n): Y
```

This example disconnects drive D, dismounts the service MAP on node
ROAD, and prompts for the qualifiers.

# NET ERROR: Displaying Error Statistics

To display the error statistics for DECnet and the virtual disk service, use the NET ERROR command. Because the NET ERROR command displays the number of seconds since the NET ZERO LAD command cleared the error counters, you can determine current error status from a specific time. For example, if you clear the error counters at 10:00 AM, you can later use the NET ERROR command to determine what errors have occurred since that time.

The counters for the virtual disk service are displayed as LAD counters.

## Format

NET ERROR

## Example

```
C:\> NET ERROR

Line Counters as of 18-Jan-88 17:31:40

Line = ETHER-1

Seconds since last zeroed          = 1402
Bytes received                     = 5063410
Bytes sent                         = 219617
Data blocks received               = 25067
Data blocks sent                   = 2828
Multicast bytes received           = 17262
Multicast blocks received          = 2466
Blocks sent, initially deferred    = 98
Blocks sent, single collision      = 7
Blocks sent, multiple collisions   = 12
Send failure                       = 0
Receive failure                    = 0
Unrecognized frame destination     = 2
Data overrun                       = 0
System buffer unavailable          = 0
Collision detect failure           = 0
```

```
Circuit Counters as of 18-Jan-88 17:31:40

Circuit = ETHER-1

LAD Counters as of 18-Jan-88 17:31:41

Drive: D                 \\ASTER\USER          XX-XX-XX-XX-XX-XX

Disk size,  in blocks   = 10240
Block size, in bytes    = 512
Disk size,  in bytes    = 5242880
Heads                   = 2
Sectors per track       = 17
Reads                   = 12
Writes                  = 0
Bytes read              = 6288
Bytes written           = 0
Timeouts                = 0
Errors                  = 0


LAD Counters as of 28-Dec-87 17:3:41

Drive: E                  \\MISSION\VXSYS       XX-XX-XX-XX-XX-XX

Disk size,  in blocks   = 20480
Block size, in bytes    = 512
Disk size,  in bytes    = 10485760
Heads                   = 2
Sectors per track       = 15
Reads                   = 0
Writes                  = 0
Bytes read              = 0
Bytes written           = 0
Timeouts                = 0
Errors                  = 0
```

```
LAD Counters as of 28-Dec-87 17:3:41

Drive: F                    \\COMA\USER        XX-XX-XX-XX-XX-XX

Disk size,   in blocks  = 4000
Block size,  in bytes   = 512
Disk size,   in bytes   = 2048000
Heads                   = 2
Sectors per track       = 15
Reads                   = 0
Writes                  = 0
Bytes read              = 0
Bytes written           = 0
Timeouts                = 0
Errors                  = 0
```

This example displays the error counters.

# NET FILE SERVICES: Displaying File and Printer Services

To display the file and printer services available on a server, use the NET FILE SERVICES command. The file services displayed are available for one or all users.

The NET FILE SERVICES command displays:

- User name
- Alias name
- Service name
- Access (read, write or create)
- RMS protection

The alias name is an alternate name for a file service. Use an alias when you want to refer to several services by only one name.

To pause the display from the NET FILE SERVICES command, use Ctrl/S and Ctrl/Q, or pipe the output through the DOS MORE command.

## Format

NET FILE SERVICES    \\node[\service][%username]
                     [password | *]

## Parameters

*node*
Is the name of the server node for which the inquiry is being made.

*service*
Is the name of the service. If you specify a service name, only information about that service is displayed.

*username*
Is the user name for the VMS account used to access the file or printer services. The default user name and password are contained in the DECALIAS.DAT file for your client. If the file DECALIAS.DAT does not contain a default user name and password, you are prompted for them.

If you do not specify a user name, the NET FILE SERVICES command lists all authorized and public services.

### password
Is the password associated with user name.

### *

Prompts you for a password.

## Description

The access displayed is the access allowed to the service for the specified user. The access is displayed as:

| Access | Meaning |
|--------|---------|
| R | Read |
| W | Write |
| C | Create |

## Example

```
C:\> NET FILE SERVICES \\SUPER%ADAMS *
Password:
Use Version 3.0 PCSA Network Connection Manager

File Server Authorized Services:

User name   Alias name    Service name   Access   RMS protection
----------------------------------------------------------------
<PUBLIC>    ISWSYS        ISWSYS         RWC      S:RWED,O:RWED,G:,W:
<PUBLIC>    LN03_DPORT    LN03_DPORT     RWC      S:RWED,O:RWED,G:,W:
<PUBLIC>    DBASES        PCAPP          RWC      S:RWED,O:RWED,G:,W:
<ADAMS>     ADAMS         PETER          R        S:RWED,O:RWED,G:,W:
```

This example displays the file services at node SUPER for user ADAMS.

## NET HELP: Getting Help

To display the set of network commands or the syntax and use of a specific
network command, use the NET HELP command. If you do not specify a
command, a partial summary of network commands is displayed.

### Format

NET HELP   *[command]*

### Parameters

*command*
Is one of the following:

| | | | |
|---|---|---|---|
| ATTRIB | COMMANDS | CONTINUE | CREATE |
| DELETE | DISK | DISMOUNT | DLL |
| DLL802 | DNP | ERROR | FILE |
| HELP | LAD | LAST | LAT |
| LIST | LOAD | MODIFY | MOUNT |
| PASSWORD | PAUSE | PERMIT | PRINT |
| REDIR | SAVE | SCH | SESSION |
| TEST | TIME | USE | ZERO |

### Example

```
D:\> NET HELP TEST
NET TEST

   The NET TEST command starts the loop test for the server. It
   verifies that your workstation can communicate with a specified
   server. When the test is complete, a success message is
   displayed. If the test is unsuccessful, an error message is
   displayed.

   If you are having problems connecting to a remote node,
   you should follow the procedures described in the
   PCSA Network Troubleshooting Guide.

   Format

      NET TEST name
```

This example displays the information for the NET TEST command.

# NET LIST: Displaying Nodes Known to Your Workstation

To display a list of nodes known to your workstation and information about each node, use the NET LIST command. The nodes displayed are defined in the DECNODE.DAT file. Use the NET DEFINE command to define nodes in the DECNODE.DAT file.

## Format

NET LIST

## Example

```
A:\> NET LIST

Known Permanent Nodes as of 1-Jan-1986 10:05:00

Executor node              = 9.999 (LETTER)

State                      On
Executor Identification    DECnet-DOS Y2.0

Node      Node     Active   LAT/     Account
Address   Name     Links    MS-NET   Information

 9.901    BLUE     0         M
 9.902    GREEN    1         L
 9.903    RED      0
 9.999    LETTER   1         M        /JONES/ . . .
Command completed successfully.

A:\>
```

This example displays the node address, node name, number of active links, and the access control information.

All nodes defined with the NET DEFINE command are automatically listed as MS-NET ( M ).

The /JONES/ listed under account information for node LETTER means
that the user name JONES is listed in the file DECALIAS.DAT. If you
invoke a network command that requires a user name, but you do
not supply the user name, the network command checks the account
information in the DECALIAS.DAT. The user name JONES is used by
the network commands as a default when the user does not specify a
user name. The password for JONES is not displayed. The ellipsis ( . . . )
indicates that a password is specified.

# NET LOAD: Restoring Network Connections

To restore network connections from a context file created using the
NET SAVE command, use the NET LOAD command. A *context file* is
an ASCII file that records all information about current connections and
saves that information. Therefore, if you make three connections from
your AUTOEXEC.BAT file and three connections at the DOS prompt,
the NET SAVE command records all connection information about
the six connections. You can now disconnect the connected drives, and
connect them to other services. When you want to restore the previous six
connections, use the NET LOAD command.

The NET LOAD command and the USE /RESTORE command perform
the same operation.

## Format

NET LOAD   *[drv:\path]filename [/LOG]*

## Parameters

*drv:*
Is the drive containing the context file.

*\path*
Is the path containing the context file.

*filename*
Is the name of the context file.

If you do not specify a drive or a path before the file name, and DNP
is installed, the NET LOAD command searches the default DECNET
directory for this context file.

If you do not specify a drive or a path before the file name, and DNP is
not installed, the NET LOAD command searches the current directory for
this context file.

## Qualifiers

*/LOG*
Displays the connections being restored as they are processed.

## Description

Connections specified in the context file replace any existing connections.

## Example

`A:\> NET LOAD SAVE.TXT`

This example restores the connections saved in the context file SAVE.TXT.

## NET MODIFY: Changing the Characteristics of a Disk Service

To change the characteristics of a specified virtual disk service, use the NET MODIFY command. You can use NET MODIFY to change the:

- Password for the virtual disk

- Number of connections allowed to the virtual disk

- Number of blocks allocated to the file

- Rating of the virtual disk

The characteristics changed with NET MODIFY override characteristics set with other commands, such as NET CREATE.

**NOTE**
To modify the characteristics of a virtual disk service, you must have write access privileges on the default device and in the directory where the corresponding logical points. See the /TYPE qualifier for the list of corresponding logicals.

## Format

NET MODIFY    \\node\service[%username] [password | *]

$$\begin{bmatrix} [/CONNECTIONS=n] \\ [/EXTENSION=n] \\ /FILE=file\text{-}spec \\ [/NOPASSWORD] \\ [/PASSWORD=string] \\ [/QUERY] \\ [/RATING=n] \\ [/TYPE=class] \end{bmatrix}$$

## Parameters

*node*
Is the DECnet node name for the server on which the virtual disk is located.

### service
Is the name of the virtual disk service.

### username
Is the name of the VMS account on the server. The default user name
and password is contained in the DECALIAS.DAT file for the workstation.
If the DECALIAS.DAT file does not contain a default user name and
password, you are prompted for them.

### password
Is the password associated with the VMS account.

### *
Prompts you for a password.

## Qualifiers

### /CONNECTIONS=n | NO_LIMIT
Limits the number of connections users can make to the virtual disk. For
n, enter a number equal to the maximum number of connections allowed.
When n is NO_LIMIT, the number of connections is unlimited. Use this
qualifier only for disks mounted for read-only access; disks mounted for
read and write access are restricted to one user. The default is 30.

### /EXTENSION=n
Is the additional number of blocks you want to allocate to the VMS
container file. Use the /EXTENSION qualifier when you want to extend
the number of blocks already allocated for the virtual disk. You cannot
extend the virtual disk to a size larger than the size specified when the
disk was created. The MS-DOS operating system does not display or
use the changed file size when you use /EXTENSION until the existing
connection to the virtual disk is deleted and a new connection is made.

### /FILE=file-spec
Is the VMS file specification for the virtual disk. You can use the /FILE
qualifier with the /TYPE qualifier to avoid entering the full VMS file
specification, which has the following format:

```
device:[username.subdir]filename.ext.
```

The default file extension for a virtual disk is .DSK. To specify the directory for the virtual disk, you can:

- Explicitly state the directory for the virtual disk in the file specification.

- Use the /TYPE qualifier to select the location of the virtual disk.

- Use the default /TYPE qualifier and specify only the file name.

### /NOPASSWORD
Deletes the password for the virtual disk.

### /PASSWORD=string
Sets the password to the string you specify.

### /QUERY
Prompts you for all the qualifiers.

### /RATING=n
Is a measure of the priority of a service. The value is used when the client connects to a virtual disk. The USE command connects to the service of the highest rating or priority. The valid range is 1 through 65,535. The default is 1.

### /TYPE=class
Determines the default device and directory for the virtual disk. The default device and directory are represented by a logical. Specify one of the following classes:

| Class | Corresponding Logical | Privileges Needed |
| --- | --- | --- |
| SYSTEM | LAD$SYSTEM_DISKS | Write access |
| BOOT | LAD$BOOT_DISKS | Write access |
| APPLICATION | LAD$APPLICATION_DISKS | Write access |
| USER | SYS$LOGIN | Write access |

SYS$LOGIN is the root of your VMS account. For more information about these logicals, see the *Server Administration with Commands*. The default class is USER.

Use the /TYPE=BOOT qualifier to create a network key disk.

# Examples

1. ```
D:\> NET MODIFY \\STAR\USER1%JONES /FILE=JONES.DSK * /E=2000
Password:
```

This example increases the allocated file size of the virtual disk file
GALAXY::[JONES]JONES.DSK by 2000 blocks.

2. ```
D:\> NET MODIFY \\STAR\USER1%JONES /CONNECTIONS=20 *
Password:
```

This example restricts the number of connections users can make to 20.

3. ```
D:\> NET MODIFY \\STAR\USER1%JONES /PASSWORD
Old Password:
New Password:
Verification:
```

This example changes the password for the virtual disk service on node
STAR. When prompted, you would enter your old password, your new
password, and a verification of the new password.

## NET MOUNT: Mounting a Virtual Disk

To make a virtual disk available for use on the network, and ready for connections made with the NET USE command, and to specify restrictions on how a virtual disk is used, use the NET MOUNT command. For example, NET MOUNT can limit the type of access and the number of connections allowed to the virtual disk.

You must create the virtual disk before mounting it. To create a virtual disk, use the NET CREATE command, described earlier in this chapter.

The virtual disk can be mounted in one of two ways.

- Temporarily mounting the disk means it is mounted only until the server is rebooted.

- Permanently mounting the disk means it remains mounted if the server is rebooted.

To ensure security of the virtual disk, set a password for the service with the /PASSWORD qualifier.

Use of the NET MOUNT command can be limited to privileged users. The PCSA_MANAGER command in the *Server Administration with Commands* describes how to limit the use of the NET MOUNT command.

**NOTE**
To mount a virtual disk, you must have write access privileges on the default device and in the directory where the corresponding logical points. See the /TYPE qualifier for the list of corresponding logicals.

## Format

NET MOUNT    \\node\service[%username] [password | *]

```
[ [/CLUSTER]
  [/CONNECTIONS=n]
  /FILE=file-spec
  [/PASSWORD=string]
  [/QUERY]
  [/RATING]
  [/RO | /RW]
  [/TEMPORARY]
  [/TYPE=class] ]
```

# Parameters

## *node*
Is the DECnet name of the server on which the virtual disk was created.

## *service*
Is the name of the virtual disk you are mounting.

## *username*
Is the name of the VMS account on the server. The default user name and
password are contained in the DECALIAS.DAT file for the workstation.
If the DECALIAS.DAT file does not contain a default user name and
password, you are prompted for them.

## *password*
Is the password associated with the VMS account.

## *

Prompts you for a password.

# Qualifiers

## */CLUSTER*
Mounts the virtual disk on each available server in a cluster. The default
is to mount the virtual disk on the specified server.

## */CONNECTIONS=n | NO_LIMIT*
Limits the number of connections users can make to the virtual disk.
For n, enter a number equal to the maximum number of connections
allowed. Use /CONNECTIONS=NO_LIMIT for an unlimited number of
connections. Use this qualifier only for disks you mount for read-only
access; disks mounted for read-write access are restricted to one user. The
default is 30.

When you specify this qualifier, also specify /RO.

## */FILE=file-spec*
Is the VMS file specification for the virtual disk. You can use the /FILE
qualifier with the /TYPE qualifier to avoid entering the full VMS file
specification, which has the following format:

```
device:[username.subdir]filename.DSK
```

The default file extension for a virtual disk is .DSK. To specify the directory for the virtual disk, you can:

- Explicitly state the directory for the virtual disk in the file specification.

- Use the /TYPE qualifier to select the location of the virtual disk.

- Use the default /TYPE qualifier and specify only the file name.

### /PASSWORD=string

Sets the password to the string you specify. The default is no password for the disk. Use the /PASSWORD qualifier to ensure the security of the virtual disk.

### /QUERY

Prompts you for all the qualifiers.

### /RATING=n

Is a measure of the priority of a service. The value is used when the client connects to a virtual disk. The USE command connects to the service of the highest rating or priority. The valid range is 1 through 65,535. The default is 1.

### /RO

Mounts the virtual disk as read-only.

### /RW

Mounts the disk as read-write. Only one user at a time can connect to a virtual disk mounted with read and write access. This is the default.

### /TEMPORARY

Means that you can mount the disk so that it is mounted only until the server is rebooted. When the server is rebooted, you must remount the disk.

### /TYPE=class

Determines the default device and directory for the virtual disk. The default device and directory are represented by a logical. Specify one of the following classes.

| Class | Corresponding Logical | Privileges Needed |
|-------|----------------------|-------------------|
| SYSTEM | LAD$SYSTEM_DISKS | Write access |
| BOOT | LAD$BOOT_DISKS | Write access |
| APPLICATION | LAD$APPLICATION_DISKS | Write access |
| USER | SYS$LOGIN | Write access |

SYS$LOGIN is the root of your VMS account. For more information about these logicals, see the *Server Administration with Commands*. The default class is USER.

Use the /TYPE=BOOT qualifier to create a network key disk.

## Examples

1. `C:\> NET MOUNT D: \\ROAD\MAP%JONES * /RW`
   `Password:`

This example mounts a read and write virtual disk permanently for the disk service MAP on the server ROAD.

Device D is associated with the disk service MAP and user name JONES. Enter the password for the user name JONES.

2. `C:\> NET MOUNT \\GALAXY\APPS%VXAPP /query/rating=1`

   `Where is the disk stored? (APPS.DSK): APPS.DSK`

   `What type of disk? (user, application, system, boot): USER`

   `Mount the disk for the entire cluster? (y/n): Y`

   `How should it be accessed? (RO,RW): RO`

   `Should it require a password to access the disk? (y/n): Y`

   `Permanently mount the disk? (y/n): Y`

   `This service is already offered on the network.`

   `Okay to continue? (y/n): Y`

If you mount a virtual disk already offered on the network, the NET MOUNT command displays a message.

This example mounts a virtual disk on node GALAXY with a service name APPS and user name VXAPP, prompts for the qualifiers, and sets the service priority to 1.

# NET PASSWORD: Changing the Password for a VMS Account

To change the password for a VMS account on a file server from your workstation, use the NET PASSWORD command. This command eliminates the need for MS-DOS users to log in to the file server account to change their passwords. Some VMS users on the file server do not have interactive or login privileges.

## Format

NET PASSWORD    \\node[%username]

## Parameters

*node*
Is the name of the file server on which your account is registered.

*username*
Is your user name at the file server.

## Example

```
C:\> NET PASSWORD \\SUPER%ADAMS
Old password:
New password:
Verification:
```

This example changes the password for user ADAMS on node SUPER.

The password is not displayed on the screen. Verify the new password by reentering it.

# NET PAUSE: Suspending Connections to File and Print Services

To suspend temporarily connections to file or print services and redirect your devices to your physical disks, directories, or printers, use the NET PAUSE command.

For example, if you connected logical device LPT1 to a network printer, you cannot use that device also for your own local printer. To temporarily disconnect LPT1 from the network, and redirect it to a local printer, use the NET PAUSE command.

To restart connections suspended temporarily using the NET PAUSE command, use the NET CONTINUE command.

## Format

NET PAUSE   *DRDR | PRDR*

## Parameters

*DRDR*
Suspends all your connections to file services.

*PRDR*
Suspends all your connections to network printers.

## Example

`A:\>` `NET PAUSE PRDR`

This example suspends temporarily print redirection for your logical devices.

You can now use any of the logical devices for your local printers.

To record and save the current network connections in a context file, use the NET SAVE command. The created context file is an ASCII text file containing USE commands. You can edit this file using an editor, such as EDLIN or SEDT.

Use this command when you want to save current network connections, disconnect and connect to other services, and then restore the previous connections.

The NET SAVE command and the USE /SAVE command perform the same operation.

# Format

NET SAVE   *[drv:\path]filename [/LOG]*
              *[/NETWORK | /VIRTUAL]*

# Parameters

*drv:*
Is the drive on which the context file is stored.

*\path*
Is the path where the context file is stored.

*filename*
Is the name of the context file.

If you do not specify a drive or a path before the file name, and DNP is installed, the NET SAVE command saves the context file in the default DECNET directory.

If you do not specify a drive or a path before the file name, and DNP is not installed, the NET SAVE command saves the context file in the current directory.

# Qualifiers

*/LOG*
Displays the connections as they are being saved.

*/NETWORK*
Saves only file and print service connections.

*/VIRTUAL*
Saves only disk service connections.

## Description

The default is to save all connections to the context file.

When you use the NET LOAD command to restore connections, existing connections are replaced. For example, assume the following:

* Drive X: is connected to \\BUBBLE\ANSI.

* You use the NET SAVE command to save the current network connections in a context file.

* You connect drive X: to \\WINDER\LN03.

* You use the NET LOAD command to restore the network connections saved in a context file.

Drive X: is now connected to \\BUBBLE\ANSI, and the connection to \\WINDER\LN03 is lost.

## Examples

1. `A:\> NET SAVE SAVE.TXT`

This example saves the current connections in a context file named SAVE.TXT.

2. `A:\> NET SAVE SAVE.TXT /V`

This example saves the current disk service connections in a context file named SAVE.TXT.

# NET TEST: Starting the Server Loop Test

To start the loop test, which verifies that your workstation can communicate with a specified server, use the NET TEST command. When the test is complete, the workstation displays a success message, or, if the test is unsuccessful, an error message.

If you are having problems connecting to a remote node, you should follow the procedures described in the *Network Troubleshooting Guide*.

## Format

NET TEST   *node*

## Parameters

*node*
Is the DECnet node name of the server.

## Example

A:\> NET TEST GRAHAM

This example starts the loop test for the node GRAHAM.

# NET TIME: Setting the MS-DOS Date and Time

To set the MS-DOS date and time from the node you specify, or from the first available MS-NET node, use the NET TIME command. The network must be running the file server.

The system administrator should set up the NET TIME command on the network key disk.

## Format

NET TIME   [node]

## Parameters

### node
Is the DECnet node name of the server from which you want to retrieve the date and time. If you do not specify a node name, the NET TIME command tries each node in the MS-NET node database until it gets a response.

## Examples

1. `A:\> NET TIME LETTER`

   ```
    The current date is 03/02/86
    The current time is 09:21:05.97
   Command completed successfully.

   A:\>
   ```

   This example gets the date and time from the PCSA server named LETTER.

2. `A:\> NET TIME`
   ```
     Time/Date serviced by node LETTER

     The current date is 03/02/86
     The current time is 09:21:05.97
   Command completed successfully.

   A:\>
   ```

   This example gets the date and time from any PCSA server.

## NET ZERO LAD: Clearing Error Counters

To clear the error counters for all the drives used for virtual disks, use the NET ZERO LAD command. After you clear the error counters, you can determine current error status from the time when you ran NET ZERO LAD. For example, if you clear the error counters at 10:00 AM, you can later use the NET ERROR command to determine what errors have occurred since that time.

## Format

NET ZERO LAD

## Example

```
c:\> NET ZERO LAD
```

This example clears the error counters for all the drives used for virtual disks.

# PERMIT: Offering a Single Session, Single Connection File Server

To offer a single session, single connection file server from any workstation to another workstation, use the PERMIT command. For example, assume you use two workstations that are both on the network. Workstation A contains information on its hard disk that workstation B wants to access. After you issue the PERMIT command, workstation B can connect to workstation A's hard disk and use the drive as if it belonged to workstation B.

The PERMIT command waits for the connection. Once the connection occurs, no other nodes can connect.

When the session is over, control returns to the MS-DOS operating system.

You cannot set a password for the alias, but you can restrict alias access to just one node by explicitly specifying the node.

If you do not specify a node name or use an asterisk ( * ) as the node name, you extend the offer to any node on the network.

You must start the network before you use the PERMIT command.

## Format
PERMIT   *alias=drv:\path [/C] [/R] [/W] [node | *]*

## Parameters

*alias*
Is a name representing the complete path name of the directory you want to share with another workstation.

*drv:*
Is the drive for the directory offered over the network.

*\path*
Is the complete path name for the directory offered over the network.

*node*
Is the DECnet node name of the workstation on the network with which you want to share your disk or directory.

\*

Specifies that any workstation can share your disk or directory.

## Qualifiers

### /C

Permits the client to create new files in the directory. You must specify the /C qualifier and the /W qualifier if the user wants to edit and save files using SEDT (or any editor that creates a backup file).

### /R

Permits read access to the files in the directory. You must specify the /R qualifier if the user wants to use the DIR command to display a directory, or use the TYPE command to display the contents of a file.

### /W

Permits write access to the files in the directory. You must specify the /C qualifier and the /W qualifier if the user wants to edit and save files using SEDT (or any editor that creates a backup file).

## Examples

1. `C:\> PERMIT TOOL=C:\TOOLS /CRW BUBBLE`

This example offers read and write access and create privileges in the directory named C:\TOOLS to the workstation with the DECnet node name BUBBLE.

2. `A:\> PERMIT TOOL=A:\TOOLS /C *`

This example offers file creation privileges in the directory named A:\TOOLS to any DECnet node.

# 7

# Sending and Receiving Broadcast Messages

At your workstation, you can send, receive, and read Broadcast messages. A *Broadcast message* is a message sent to workstations on a local area network (LAN) from a server or another workstation on the LAN. A Broadcast message can contain a maximum of 128 characters.

The remainder of this chapter discusses:

- Sending Broadcast messages
- Running the Broadcast (BCAST) utility
- Running the Receiver (RCV) utility
- Reading single and multiple Broadcast messages
- Receiving Broadcast messages with graphics
- Saving Receiver options

## Sending Broadcast Messages

From your workstation, you can use the BCAST utility to send Broadcast messages to one workstation or to a maximum of 200 workstations connected to the PCSA network. BCAST sends a message that is displayed immediately upon the specified node's screen.

## Running the Broadcast (BCAST) Utility

Run the Broadcast (BCAST) utility to send a message to a workstation or list of workstations connected to the PCSA network.

## Format

BCAST   *node | filename.DIS[,node,...] message*

## Qualifiers

### *node*
Is the name of the node to receive a Broadcast message. You can specify a maximum of 200 node names per message.

### *filename.DIS*
Is the name of a distribution list file containing a list of nodes. The file must have a .DIS file extension and must be in a directory on the path. You must specify one node per line and each node name must be 15 characters or less.

### *message*
Is the message BCAST sends to the specified workstation or list of workstations.

## Description

After you enter a BCAST command line, the BCAST command appends the .DIS file extension to each name you specify on the command line, and does one of the following:

- If BCAST finds name.DIS, BCAST treats the name as a distribution list and sends the message to all the nodes in the list.

- If BCAST does not find name.DIS, BCAST treats the name as a single node name and sends the message to that node.

You can create a file named BCAST.ID, which contains your personal name. Then, when you send a message, the workstations receiving the message display both the node name of your workstation and the personal name you specified in BCAST.ID. Specify a personal name of 12 characters or less.

**NOTE**
The BCAST.ID file must be in a directory on the path.

# Examples

1. `M:\> BCAST BRONTE I am now in my office` `Return`

This example sends the message "I am now in my office" to node
BRONTE. This example assumes that BRONTE is a node name, and
not a distribution list (BRONTE.DIS).

2. `M:\> BCAST MILTON,BRONTE Let's meet in the cafeteria` `Return`

This example sends the message "Let's meet in the cafeteria" to the nodes
MILTON and BRONTE. This example assumes that both MILTON and
BRONTE are node names.

3. `M:\> BCAST GROUP,BRONTE "Meeting in 10 minutes"` `Return`

This example sends the message "Meeting in 10 minutes" to all the nodes
listed in the file GROUP.DIS plus node BRONTE. This example assumes
that GROUP is the name of a distribution list (GROUP.DIS) and that
BRONTE is a node name.

## Running the Receiver (RCV) Utility

Run the Receiver (RCV) utility to:

- Read unread messages
- Change the location on the screen, color, type, and number of unread messages that can be stored (to read)

RCV is set up automatically. You do not have to change any settings to start using it; however, you can run RCV to choose:

- Whether to read unread messages
- Where on the screen the Broadcast message is displayed
- The color of the Broadcast header and message
- The number of unread Broadcast messages that can be stored
- Which types of messages you receive

**NOTE**
When loading the RCV utility into expanded memory using EMSLOAD, specify the command qualifiers you want on the command line. You cannot set or reset command line qualifiers for the RCV utility after it is in expanded memory.

## Format

RCV   *[/H:n,n][/L:T | B][/M:n,n][/N:n][/R:n][/S:Y | N][/T:n][/D]*

## Qualifiers

*/H:n,n*
Specifies the foreground color and the background color of the Broadcast header. Each "n" value corresponds to a color. The value for the first "n" must differ from the value for the second "n."

The first value (foreground color) must be an integer from 1 through 16. The second value (background color) must be an integer from 1 through 8. The defaults are 1 and 8, respectively. Table 7–1 contains valid values and their corresponding colors.

**Table 7–1   Values and Corresponding Colors**

| | | | |
|---|---|---|---|
| 1 | Black | 9 | Dark Grey |
| 2 | Blue | 10 | Light Blue |
| 3 | Green | 11 | Light Green |
| 4 | Cyan | 12 | Light Cyan |
| 5 | Red | 13 | Light Red |
| 6 | Magenta | 14 | Light Magenta |
| 7 | Brown | 15 | Yellow |
| 8 | White | 16 | Intensity White |

## /L:T | B

Specifies whether you want Broadcast messages displayed at the top or bottom of the screen.

Where:

T          Displays Broadcast messages at the top of the screen.

B          Displays Broadcast messages at the bottom of the screen. This is the default.

## /M:n,n

Specifies the foreground color and the background color of the message. The value for the first "n" must differ from the value for the second "n."

The first value (foreground color) must be an integer from 1 through 16. The second value must be an integer from 1 through 8. The defaults are 8 and 1, respectively.

Use Table 7–1 to select values.

## /N:n

Specifies the number of messages you can store in a queue without reading. Each message takes approximately 160 bytes of memory. Therefore, the more messages you keep, the more memory you use.

The range is an integer from 1 through 10. The default is 10.

If you want to specify a number different from the default of 10, you must edit your AUTOUSER.BAT file and add the /N: qualifier to the RCV command line.

## /R:n

Specifies the source from which your workstation receives messages.

The default for the RCV command in STARTNET.BAT is to receive messages from the server (/R:0). If you start RCV from the command line, the default is to receive all messages (/R:2).

Table 7–2 contains the values for "n" and their corresponding sources.

**Table 7–2   Sources of Broadcast Messages**

| Value | Source of Messages You Receive |
|-------|--------------------------------|
| 0 | Receive messages only from the server. |
| 1 | Receive messages only from other workstations. |
| 2 | Receive all messages, that is, from the server and other workstations. |

## /S:Y(es) | N(o)

Turns the workstation beeping sound on (Yes) or off (No) when you receive a message or when you are in graphics mode.

The default is on (Yes).

## /T:n

Specifies the types of messages you receive.

Table 7–3 contains the values for "n" and their corresponding types.

**Table 7–3   Types of Broadcast Messages**

| Value | What You Receive |
|-------|------------------|
| 0 | No messages (you lose all messages). |
| 1 | All messages. This is the default. |
| 2 | Only the messages sent to you individually. |
|   | The system administrator can send you a message that pertains only to you. For example, you can receive a message that you are using too much disk space. |
| 3 | Only the messages sent to all users. |

## /D

Enables you to read the unread messages.

## Examples

1.  `M:\>` `RCV /H:8,5 /S:Y /R:0` `Return`

This example changes the background color of the header to red, turns on the workstation beeping sound, and specifies that you want to receive only messages from the server.

2.  `M:\>` `RCV /D` `Return`

This example enables you to read the messages you did not read previously.

3.  `M:\>` `RCV /T:0` `Return`

Because the system administrator uses Broadcast only to send important messages, you should read them when you get them. If, however, you want to turn off Broadcast, this example shows you how to do it.

## Reading Single and Multiple Broadcast Messages

At your workstation, you can receive a Broadcast message at any time.
When your workstation receives a Broadcast message, the message is
displayed automatically on your screen. After you receive a Broadcast
message, you can do one of the following:

• Press the two-key sequence Alt/Q to stop reading messages. The
  message area is removed from the screen, and you return to the place
  where you were before you began reading Broadcast messages. You
  can still receive Broadcast messages.

• Press the two-key sequence Alt/N to read the next message.

A typical Broadcast message looks like the following:

```
From - WINDOW::SYSTEM
This is the message.
It can be two lines.

[Alt Q Quit]
```

You can receive several Broadcast messages at once or you could be
reading one message and get another. When there are more messages
waiting to be read, you can choose to read the messages or leave the
Receiver utility. The following message shows the prompt you receive
when you have two Broadcast messages.

```
From - WINDOW::SYSTEM
The first message displays here.

[Alt Q Quit] [Alt N Next]                [Msgs -02]
```

Because a server's system administrator sends Broadcast messages about
important server operations, you should read them when you receive
them.

RCV can save up to 10 unread messages. If you leave RCV before reading
all of them, you can later return to review your unread messages by
entering:

RCV /D

## Receiving Broadcast Messages with Graphics

If you receive Broadcast messages while running a graphics program, the workstation beeps immediately to inform you of the message. However, you cannot read the message while running the graphics program.

To read messages received while running a graphics program, you must:

1. Leave the graphics program

2. Run the RCV utility with the /D qualifier

## Saving Receiver Options

Each time your workstation starts, the Receiver utility is loaded with the default settings. To change the default values permanently, add the receiver command qualifiers to your STARTNET.BAT file. This file saves your changes for subsequent sessions.

For example, to set your workstation to queue only five messages instead of ten, add the following line to your STARTNET.BAT file:

RCV  /N:5

# 8

# Commands for Starting the PCSA Network

This chapter describes the workstation commands you can use to start the PCSA network. The discussion of each command includes a general description, the format with required and optional qualifiers and their default values, and at least one example of the command.

Table 8–1 lists the commands to start the network and their functions.

**Table 8–1   Commands to Start the Network**

| Command | Function |
| --- | --- |
| DLL | During initialization, the data link layer (DLL) reads the permanent database file, DECPARM.DAT in the DECnet database path. |
| DLL802 | Is the extended data link interface module which supports IEEE 802.3 and Ethernet format frames. This module must be loaded immediately after the DLL module. |
| DNNETHLD | Loads all Ethernet variants of DNP into expanded memory (EMS). |
| DNP | Starts the DECnet-DOS Network Process. The DECnet-DOS Network Process is required by all other DECnet-DOS services and utilities. |
| DNPDCPLD | Loads the asynchronous DECnet DNP into expanded memory (EMS). |
| LAD | Starts the virtual disk client software. |
| LAST | Starts the virtual disk transport layer. |
| LAT | Local Area Transport (LAT) software allows you to use terminal communications over the LAN using the LAT protocol. |

**Table 8–1 (Cont.)   Commands to Start the Network**

| Command | Function |
|---------|----------|
| REDIR | Starts the redirector. |
| SAVE | Records current memory information. This enables you to unload components from memory and load them again later. |
| SCH | Starts the real-time scheduler, which is required for all other DECnet/PCSA services and utilities. |
| STUB | Emulates NETBIOS so that the REDIR command can be loaded before any other network components. |

## Starting the Network

Table 8–2 shows the order of the commands you must enter to start the PCSA network.

- Column 1 starts the network for file services, printer services, and terminal services. You cannot unload any utilities if you start the PCSA network in the order shown in Column 1.

- Column 2 starts the network for file services, printer services, and terminal services. You can unload the SCH, DLL, DNP, and LAT utilities if you start the PCSA network in the order shown in Column 2.

- Column 3 starts the network for file services, printer service, virtual disk services, and terminal services. You cannot unload any utilities if you start the PCSA network in the order shown in Column 3.

- Column 4 starts the network for file services, printer service, virtual disk services, and terminal services. You can unload the SCH, DLL, LAST, LAD, DNP, and LAT utilities if you start the PCSA network in the order shown in Column 4.

**Table 8–2   Methods for Starting the PCSA Network**

| Column 1 | Column 2 | Column 3 | Column 4 |
| --- | --- | --- | --- |
| SCH | STUB | SCH | STUB |
| DLL | REDIR | DLL | REDIR |
| DNP | SAVE | LAST | SAVE |
| REDIR | SCH | LAD | SCH |
| LAT | DLL | DNP | DLL |
| | DNP | REDIR | LAST |
| | LAT | LAT | LAD |
| | | | DNP |
| | | | LAT |

To start the network for file services, printer service, virtual disk services, and terminal services in EMS, execute the commands in the following order:

    SCH
    DLL
    DLL802 (optional)
    EMSLOAD LAST
    EMSLOAD LAD
    EMSLOAD LAT
    EMSLOAD RCV
    DNNETHLD (EMS loader for all DECnet Ethernet variants of DNP)
    DNPDCPLD (EMS loader for asynchronous DECnet DNP)
    REDIR

The commands to start the network reside in the DECNET subdirectory on the system service.

# DLL

The data link layer (DLL) is required for Ethernet configuration. Install DLL after SCH but before LAT, LAST or DNP.

During initialization, DLL reads the permanent database file, DECPARM.DAT, in the DECnet database path.

## Format

DLL   [drv:\path] [/FAST] [/IRQ:n] [/PORT:n] [/T:n]

## Parameters

*drv:*
Is the drive containing the DECnet database. The default drive is the current drive.

*\path*
Is the path to the DECnet database. The default path is \DECNET.

## Qualifiers

*/FAST*
Table 8–3 indicates where the datalink is run based on the /FAST qualifier and mode you choose.

**Table 8–3   Determining Where the Datalink is Run**

| /FAST Specified | Mode | Where Datalink is Run |
|---|---|---|
| Yes | Small | Conventional RAM |
| Yes | Large | Conventional RAM |
| No | Small | Conventional RAM |
| No | Large | ROM |

This qualifier applies only to the DEPCA datalink.

### /IRQ:n

Is the interrupt request line for your Ethernet controller. The default is 5.
For more information about the setting required, see the manufacturer's
documentation for the Ethernet controller.

### /PORT:n

Specifies the input/output (I/O) port address for the installed Ethernet
controller.

### /T:n

Indicates whether your 3Com 3C503 (Etherlink II) controller has
ThinWire or Standard Ethernet connector. This qualifier is valid only
for workstations with 3Com 3C503 (Etherlink II) controllers installed.

1          Indicates ThinWire.

           If you configure some of the older 3C503s for ThinWire (/T:1) and use
           thick wire, the Ethernet adapter may be damaged.

2          Indicates a Standard Ethernet "Thickwire" connection. This is the
           default.

## Description

When used with the DEPCA, DLL ignores the /IRQ, /PORT, and /T
qualifiers.

## Examples

1.  DLL /T:1

This example starts the data link layer and reads DECPARM.DAT.
The example indicates that the 3Com 3C503 controller has a ThinWire
connector.

2.  DLL /FAST

This example starts the RAM data link layer and reads DECPARM.DAT.
If the DEPCA is configured in large mode, the 48 Kbyte on board DEPCA
RAM is used for buffers.

This RAM data link layer runs faster but consumes more user memory.

# DLL802

DLL802 is the extended data link interface module that supports IEEE
802.3 and Ethernet format frames. Load this module immediately after
the DLL module.

## Format

DLL802   *[/B:n] [/M:n] [/P:n] [/S:n]*

## Qualifiers

### /B:n
Specifies the maximum number of buffer information blocks (BIBs) to be
allocated. Each BIB occupies 14 bytes of memory. The valid range of n is
48 through 255. The default value is 64.

### /M:n
Specifies the maximum number of multicast addresses that can be
enabled by a DLL802 portal. The valid range of n is 2 through 8. The
default value is 2.

### /P:n
Specifies the maximum number of DLL802 portals. The valid range of n
is 6 through 16. The default value is 6.

### /S:n
Specifies the maximum number of service access point (SAP) addresses
that can be enabled by a DLL802 portal. The valid range of n is 2 through
8. The default value is 2.

## Example

DLL802 /B:48

This example starts the extended data link interface with 48 buffer
information blocks.

# DNNETHLD

The DNNETHLD command loads all DECnet Ethernet variants of DNP into expanded memory.

## Format
DNNETHLD

## Example

DNNETHLD

This example loads the Ethernet variant of DNP into expanded memory.

# DNP

The DNP command starts the DECnet-DOS Network Process. The DECnet-DOS Network Process is required by all other DECnet-DOS services and utilities.

## Format

DNP   *[drv:\path ]*)

```
 [ [/CMD:n]         ]
 | [/FC:n]          |
 | [/I2A:[Y | N]]    |
 | [/LAN:n]         |
 | [/M:[E | D]]      |
 | [/MSN:n]         |
 | [/NAM:[Y | N]]    |
 | [/NBS:n]         |
 [ [/REM:n]         ]
```

## Parameters

*drv:*
Is the drive containing the DECnet database.

*\path*
Is the path to the DECnet database. The default path is the DECNET subdirectory on the current drive or the DECNET database path you specified for DLL.

## Qualifiers

*/CMD:n*
Is the maximum number of simultaneous commands allowed in a session queue. The default value is the number of SDBs.

*/FC:n*
Is the flow control option for NETBIOS links.

## /I2A:[Y | N]

Y means the INT 2AH call is serviced; N means the INT 2AH call is not serviced. The default is Y. Set to N if you are using an alternate INT 2A interface. Then session only services INT 5C calls.

## /LAN:n

Is the LANA number of the adapter card that NETBIOS emulates. The value n is either zero (0) or one (1). The default value is 0. Set this value to 1 if you already have a PC Network adapter card installed.

## /M:[E | D]

Turns on or turns off multicast traffic. With multicast traffic enabled, the workstation periodically receives messages from other nodes about services (such as LAT services) available on the network. For information on controlling multicast traffic, see *Installation and Configuration Guide: DECnet PCSA Client for DOS (VMS Media)*. The default is multicast traffic enabled.

## /MSN:n

Is the number of entries in the table for servers in session's volatile database. Values can range from 0 to 2000. The default is the number of MS-NET nodes in the DECnet node database or 12, whichever is larger. To determine the number of MS-NET nodes, use the NET LIST command. NET LIST displays node addresses, node names, active links, and whether the node is an MS-NET (M) or LAT (L) server. Count each node with an "M" after its name.

## /NAM:[Y | N]

Y means the local adapter names for the server are added to the volatile local adapter database. The default is N.

## /NBS:n

Is the size of the largest message session supports. The default value is 65,535.

## /REM:n

Is the number of entries in the table for the remote adapter names in session's volatile database. The value can range from 0 to 200. The default is 1. To use the network commands in this chapter, the value should be one greater than the number of remote adapter names. To determine the number of entries, use the NCP LIST KNOWN REMOTE-ADAPTER command. For more information, see *DECnet-DOS Network Management Guide*.

# Examples

1. DNP

This example starts the DECnet-DOS network process.

2. DNP /M:E

This example starts the DECnet-DOS network process with multicast
enabled. This means that your workstation receives messages from other
nodes about services they offer.

## DNPDCPLD

The DNPDCPLD command loads the asynchronous DECnet DNP into expanded memory.

## Format

DNPDCPLD

## Example

DNPDCPLD

This example loads asynchronous DNP into expanded memory.

# LAD

The LAD command starts the virtual disk client software. To use the client software, your workstation must be connected by a LAN to a VMS system offering a disk service.

Before you use this command, LAST should be running and the device driver LADDRV.SYS must have been specified in the CONFIG.SYS file. The CONFIG.SYS file must contain the command:

```
DEVICE = LADDRV.SYS /D:n
```

Where:

n    Is the number of virtual drives. The range for n is 1 through 8. The default is 4.

## Format

LAD   *[/A:D | E] [/R:n] [/W:n]*

## Qualifiers

*/A:D | E*
Use D to disable and E to enable an audible "click" for each request made to the network using LAD. The default is click disabled.

*/R:n*
Specifies the transaction size for a virtual disk read operation. The valid range is 1 through 15. The default value is 15. In most cases, performance increases as the transaction size increases.

Incorrect LAD transaction size settings result in timeouts. Excessive timeouts result in lost LAD connections.

Table 8–4 lists the Ethernet controllers and the correct transaction size for virtual disk read operations.

Table 8–4  Ethernet Controllers and Optimal Transaction Settings

| Controller/Workstation | Optimal Setting |
| --- | --- |
| XT-class workstation (including Turbo models) | No more than /R:2 |
| INTERLAN | /R:1 |
| 3C501 | /R:1 |
| VAXmate | /R:12 |
| 3C523 | /R:12 |
| 3C503 | /R:4 |
| Old DEPCA (rev D or older) | /R:12 |
| New DEPCA | /R:n is set to the number of receive buffers configured minus one. |

Because there is no command line to be parsed during remote boot, LAD calculates defaults according to Table 8–4.

### /W:n
Specifies the transaction size for a virtual disk write operation. The valid range is 1 through 15. The default value is 15.

**NOTE**
You can change the /A /R, and /W, qualifiers at any time by reissuing the LAD command.

## Examples

1. `LAD /A:E`

This example enables the audible click for requests made to the network.

2. `LAD /R:12 /W:15`

This example sets the transaction size for virtual disk read operations to 12 and the transaction size for virtual disk write operations to 15.

# LAST

The LAST command starts the virtual disk transport layer. To use this client software, your workstation must be connected by a LAN to a VMS disk server.

Before you use this command, specify the device driver LADDRV.SYS in the CONFIG.SYS file. The CONFIG.SYS file should contain the command:

```
DEVICE = LADDRV.SYS
```

For more information, see *Installation and Configuration Guide: DECnet PCSA Client for DOS (VMS Media).*

## Format

LAST   *[/C:D | E] [/G:n] [/M:D | E] [/N:name]*

## Qualifiers

### /C:D | E
D turns off and E turns on virtual disk checksumming. The default is checksumming disabled, which increases performance.

### /G:n
Is the group code number for LAST. The valid range is 0 through 1023. The default is 0.

### /M:D | E
Use D to turn off and E to turn on multicast traffic. The default is multicast traffic enabled. With multicast traffic enabled, the workstation periodically receives messages from other nodes about services available on the network. Disabling multicast traffic reduces the load on the system.

### /N:name
Is a DECnet node name. If the DECnet Network Process (DNP) is already loaded, this client software uses the DECnet node name of your workstation.

## Examples

1. `LAST`

This example starts the virtual disk transport layer.

2. `LAST /M:E /C:E`

This example enables multicast traffic and checksumming of virtual disks.

# LAT

Local Area Transport (LAT) software allows you to use terminal
communications over the LAN by using the LAT protocol.

## Format

LAT   *[/D:n] [/G:group] [/N] [/R:retransmissions] [/U]*

## Qualifiers

### /D:n
Is the size of the network terminal services directory to which you can
connect. This directory is also called the LAT service table. The default
is 10. For n, you can specify a number from 1 through 1044. The number
you specify is added to the default size of 10. For example, if you specify
/D:4, the size will be 14. Each additional entry over the default uses an
extra 47 bytes of memory.

### /G:group
Is a number or a series of numbers. The valid range for each number
is 0 through 255. Each number represents the LAT group code for the
subset of the VAX computers to which you can connect. If you specify a
series of numbers, separate them with commas. The default is that you
can connect to all LAT group codes. For a detailed list of the LAT group
codes, see your system administrator.

### /N
Disables multicast traffic when the LAT is started. With multicast traffic
disabled, the workstation does not listen to periodic announcements of
LAT services made by servers on the LAN, and the load on the system is
reduced.

### /R:retransmissions
Is the maximum number of retransmissions permitted for a LAT
data packet before the transmission stops. The valid range is 4
through 255. The default is 8. If you specify a large number for
retransmissions, performance is reduced because of the increased number
of retransmissions that can occur.

### /U
Unloads the LAT component from memory.

## Examples

1.  `LAT`

This example starts the Local Area Transport software.

2.  `LAT /G:0,2,15,30`

This example enables group codes 0, 2, 15, and 30.

# REDIR

The REDIR command starts the MS-NET redirector. The MS-NET redirector is required for routing a workstation's MS-DOS requests over the network to a remote server.

If you are running DOS Version 4.0, you must execute REDIR400.EXE.

## Format

REDIR   *[/HIMEM:[Y | N] [/L:n] [/Pn:x] [/S:n]*

## Qualifiers

### /HIMEM:Y | N
Determines whether the redirector is loaded into extended memory (XMS).

Y        If extended memory is available, load the redirector into extended memory. Otherwise, load the redirector into conventional memory. Y is the default.

N        Load the redirector into conventional memory.

### /L:n
Is the number of redirections (active connections to file or printer services) which the redirector can establish. The default is 10.

### /Pn:x
Is the print buffer size.

n        Is the number (1, 2, or 3) for the printer. The default is 1.

x        Is the size of the print buffer in bytes. The valid range is 1 through 2048. The default is 128.

### /S:n
Is the number of servers to which the redirector can connect. The default is 4. The maximum limit is defined within DECPARM.DAT. If you set n low, you save memory.

## Examples

1. `REDIR /HIMEM:N`

This example specifies that the redirector should always be loaded into conventional memory.

2. `REDIR /S:2`

This example specifies that the redirector can connect to two servers.

# SAVE

The SAVE command records current memory information. It is used with the MEMMAN, REDIR, and STUB commands.

When you unload network components from memory, the SAVE command saves information about the location of those unloaded network components in memory.

## Format

SAVE

## Example

```
SAVE
MEMMAN /U
```

This example loads SAVE, and then, using the MEMMAN command, unloads all the terminate and stay resident programs that were loaded after the SAVE command was run.

The SAVE command saves the memory information about the location of the unloaded network components.

# SCH

The SCH command starts the real-time scheduler. The real-time scheduler is required for all other DECnet/PCSA services and utilities.

## Format

SCH   *[/A] [/S]*

## Qualifiers

### /A
Automatically configures the scheduler timer. The scheduler uses the CMOS real-time clock if the workstation is equivalent to an IBM/AT. Otherwise, it uses the system clock as the scheduler timer.

### /S
Uses the system clock as the scheduler timer.

## Description

If you specify SCH and omit both qualifiers, the scheduler defaults to the system clock.

## Example

```
SCH /S
```

This example uses the system clock for the scheduler timing.

# STUB

The STUB command emulates NETBIOS so that the REDIR command can be loaded before any other network components. Then, you can unload network components from memory, leaving the redirector resident.

## Format

STUB

## Example

STUB

This example loads STUB in preparation for loading the REDIR and SAVE commands. When the network is loaded in this manner, you can unload the remaining network components from memory.

# A
# Messages for the PCSA Network

This appendix contains a list of messages that can be displayed on your workstation while you are using the network. The message is shown first, followed by an explanation and advice on how to respond to the problem.

**Access denied**

*Explanation:* Any of the following occurred:

*   You tried to delete or modify a read-only file.

*   You entered the wrong password for the user name, or you entered an invalid user name. This error message can result from any of the NET commands except NET ATTRIB, NET PASSWORD, and NET TIME.

*   While trying to do a remote boot, the workstation could not connect to a service. Your password may be incorrect or you may have exceeded the maximum number of connections allowed for the service.

*User Action:* Try one of the following:

*   Do not try to delete or modify a read-only file.

*   If a password is required, enter the correct one. If no password is needed, omit it.

*   Make sure the server is running. Also, make sure the MS-DOS versions on the client and the server are the same.

*   If your attempt to connect exceeded the maximum number of allowable connections, you will have to wait until someone else disconnects. Then you can attempt to connect.

**Allocate Private RAM Error**
**Hit any key to try other boot**

> *Explanation:* An error occurred while allocating private RAM.

> *User Action:* Make sure the boot file on the server is OK. If it is, there is a hardware problem.

**Ambiguous qualifier "string"**

> *Explanation:* You did not specify enough letters for a qualifier to make it unambiguous.

> *User Action:* Reenter the USE command and specify enough letters to make the qualifier unambiguous.

**Bad container file**

> *Explanation:* The disk size or block size is zero.

> *User Action:* Contact your system administrator.

**Cannot allocate logical frame.**

> *Explanation:* The scheduler cannot allocate EMS space for the specified module.

> *User Action:* Do any, or all, of the following:

> • To make sure you have enough space in EMS, enter the following command at the DOS prompt:

>    MEMMAN /E  Return

> • To make sure the EMS driver works correctly, enter the following command at the DOS prompt:

>    EMSSPEED  Return

> If this command responds with any information other than an error message, your EMS driver is working correctly.

**Cannot boot local disk**

> *Explanation:* During local boot, the first block of the boot disk could not be read.

> *User Action:* If you are booting from drive A, make sure there is a valid key diskette in drive A. If you are booting from the hard disk, make sure it is operational and that the startup files are present on the partition. Retry the command or the boot procedure.

**Cannot connect to self**

*Explanation:* You tried to connect to a service, but incorrectly specified your network name as the name of your workstation node.

*User Action:* Retry the command, using the correct network name.

**Cannot disconnect drive**

*Explanation:* You ran the NET DISMOUNT command, but the drive could not be disconnected.

*User Action:* This message is usually displayed with a secondary message. Refer to the information under the secondary message.

**Cannot disconnect from current drive**

*Explanation:* You tried to disconnect from your current drive.

*User Action:* If you want to disconnect from the current drive, change your default drive and reenter the USE command.

**Cannot initialize the window system**

*Explanation:* You tried to use either the LATCP ADD or DELETE command with no parameters. The window system could not display the information for the operation you specified.

*User Action:* Make sure you have sufficient memory available. If you have sufficient memory, try running another utility, such as PCMAIL, that uses video extensively.

You may also have a video problem that requires you to set your VGA card to emulate CGA. Set the VGA card using the utility supplied with the card.

**Cannot open "filename.ext"**

*Explanation:* Either LATCP.HLP, DECNODE.DAT, or DECLAT.DAT could not be opened.

*User Action:* Do any, or all, of the following:

- Make sure your path is valid for these files.

- Make sure you have sufficient storage space on your disk.

- Make sure you are not using a read-only disk. The LATCP CONVERT command modifies DECNODE.DAT, and the LATCP ADD and DELETE commands modify DECLAT.DAT.

**Cannot read the requested module.**

*Explanation:* DOS cannot read the module due to file corruption or disk failure.

*User Action:* Make sure the disk is usable and the file on the disk is not corrupted.

**Cannot redirect drive**

*Explanation:* One of the following occurred:

• You tried to redirect a drive that is substituted.

• You ran the NET MOUNT command, but the drive could not be redirected.

*User Action:* This message is usually displayed with a secondary message. Refer to the information under the secondary message.

**Cannot share a SUBSTed drive**

*Explanation:* You specified a drive letter that is directed to another drive with the SUBST command.

*User Action:* Specify the actual path.

**Can't share 'pathname'**
**Drive is redirected**

*Explanation:* The path specified was redirected over the network and cannot be shared with the PERMIT command.

*User Action:* Specify the actual path.

**Command arguments incorrect**

*Explanation:* You specified invalid arguments on the command line.

*User Action:* Reenter the command and make sure you specify valid arguments for the command.

**Command does not exist**

*Explanation:* You entered an invalid command.

*User Action:* Use the NET HELP command to display a list of valid commands.

**Command operands incorrect**

*Explanation:* You entered a network command and included too much or too little information.

*User Action:* Use the NET HELP command to check the command format. Retry the command.

**Command parameters incorrect**

*Explanation:* You incorrectly entered a parameter for a command.

*User Action:* Use the NET HELP command to check the command format. Retry the command.

**Connection failed to 'alias'**

*Explanation:* You issued another USE command to 'alias'. That would be a second connection, which the PERMIT command does not allow.

*User Action:* Do not try to connect more than once to an alias whose access has been limited by the PERMIT command.

**Connection failed to 'alias' - session closed**

*Explanation:* A client system specified an incorrect alias or password in the USE command while trying to connect to your system.

*User Action:* The session is closed and the PERMIT command waits for a successful connection. You must inform the person issuing the USE command that it was invalid.

**Connection request to "string" was rejected**

*Explanation:* You tried to connect to a virtual disk service and specified an invalid password.

*User Action:* Verify that you have the correct password. Reenter the command.

**Could not find hardware Ethernet address**

*Explanation:* You tried to use the /X qualifier and could not communicate to the data link layer.

*User Action:* Verify that the network is installed and running using the USE command with the /STATUS qualifier. Check your system configuration.

**Could not parse "string"**

*Explanation:* The USE command could not interpret the command line.

*User Action:* Check the format of command line your entered. Enter each parameter as it is describes in Chapter 2, Managing Network Connections with the USE Utility.

**Currently no TIME SERVER available**

*Explanation:* You used the NET TIME command and specified no node name. There is no server available from which to get the time.

*User Action:* Retry the command and specify a known node name.

**Datagram services unavailable**

*Explanation:* MS-NET, rather than NETBIOS is installed. To run the Receiver utility, NETBIOS should be installed.

*User Action:* See your system administrator to install NETBIOS.

**DECnet is not installed**

*Explanation:* The network is not running.

*User Action:* Do all of the following:

- Make sure STARTNET.BAT has executed.

- Use the USE command with the /STATUS qualifier to determine the current status of the network.

**Device already redirected**

*Explanation:* You tried to redirect a drive that is already redirected. You can only redirect a drive once.

*User Action:* Do not try to redirect a redirected drive.

**Device "string" is currently in use**

*Explanation:* You tried to connect to a device that is already connected.

*User Action:* Do one of the following:

- Use another device.

- Disconnect the device and connect it to the service you want.

- Replace the connection using the /REPLACE qualifier. For more information, see Chapter 2, Managing Network Connections with the USE Utility.

**Device "string" is not connected**

*Explanation:* You tried an operation that requires a connection.

*User Action:* Make sure the device is connected. If the device is not connected, use the USE command to make the appropriate connection. Retry the operation.

**Device is not redirected**

*Explanation:* You specified a printer to which you are not connected.

*User Action:* Connect to the printer using the USE command.

**Device d: not connected**

*Explanation:* You tried to disconnect or reconnect to a device that was not connected.

*User Action:* Run the USE command to display your current connections.

**Display row argument incorrect**

*Explanation:* You entered an incorrect argument for Receiver's /L qualifier.

*User Action:* Reenter the RCV command and specify either /L:T or /L:B.

**DLL has not been installed.**

> *Explanation:* You must install the datalink before you can use EMSLOAD.
>
> *User Action:* At the DOS prompt, install the datalink by entering:
>
> DLL   Return

**DLL not loaded**

> *Explanation:* You cannot start LATCP until you load the scheduler (SCH) and the datalink (DLL).
>
> *User Action:* At the DOS prompt, install the scheduler and the datalink by entering:
>
> SCH   Return
> DLL   Return

**Drive already in use**

> *Explanation:* You ran the NET MOUNT or USE command, but the specified drive is already being used.
>
> *User Action:* Use the USE command with the wildcard device name ( *: ) to connect the next available drive to the service. If the service did not mount, retry the NET MOUNT command and specify another drive.

**Drive "string" is not a virtual drive**

> *Explanation:* You tried to do a virtual disk function on a non-virtual drive.
>
> *User Action:* Enter the following command to display the connected and available drives:
>
> USE   Return

**Drive d: not connected**

> *Explanation:* You tried to disconnect or reconnect a device that was not connected.
>
> *User Action:* Run the USE command to display your current connections.

**Drive d: not connected - drive is paused**

*Explanation:* You cannot connect to a file or printer service that is paused.

*User Action:* Do one of the following:

- To use the file server, run the NET CONTINUE DRDR command and then the USE command.
- To use the printer, run the NET CONTINUE PRDR command and then the USE command.

**Drive d: not disconnected - drive is current**

*Explanation:* You cannot disconnect from the specified drive because it is your current drive.

*User Action:* Change to another drive. Retry disconnecting from the specified drive.

**Drive d: not disconnected - drive is paused**

*Explanation:* You tried to disconnect from a paused device.

*User Action:* Run the NET CONTINUE DRDR command to resume use of the specified drive. Then, disconnect from the specified drive.

**Drive d: not disconnected - drive is redirected**

*Explanation:* You are trying to disconnect a virtual drive that is redirected to a file service.

*User Action:* Using the USE command, disconnect from the file service. For example, to disconnect from drive N, enter:

```
USE N: /D
```

Then, disconnect from the virtual drive. For more information on the USE command, see Chapter 2.

**Drive d: not disconnected - drive is SUBSTItuted**

*Explanation:* You tried to disconnect from a virtual drive, but the drive has been substituted.

*User Action:* Disable the substitution. For example, to disable the substitution for drive N, enter:

SUBST N: /D

Retry the USE command.

**Drive not connected to the file server**

*Explanation:* You ran the NET ATTRIB, but the specified drive is not connected to the server.

*User Action:* Either specify the correct drive or run the USE command to connect the drive to the server.

**Drive not in use**

*Explanation:* You ran the NET DISMOUNT command, but the specified drive is not being used.

*User Action:* Use the USE command to connect another drive to the service. If the service did not dismount, retry the NET DISMOUNT command and specify the drive currently being used.

**EMS has not been installed.**

*Explanation:* You have not installed an EMS driver.

*User Action:* Install an EMS driver by entering the following command into your CONFIG.SYS file:

DEVICE=filename.SYS

**Error initializing LAST**
**Hit any key to attempt local boot**

*Explanation:* An error occurred initializing LAST during remote boot.

*User Action:* Do one or all of the following:

- Restart your workstation by pressing Ctrl/Alt/Del.
- Make sure you have the correct remote boot task file on the server.
- Reinstall the boot file on the server.
- Contact the system administrator for the server.

**Error in server name**

*Explanation:* You specified a server name that is too long.

*User Action:* Specify a server name no longer than six characters.

**Error: Network device type incorrect**

*Explanation:* You tried to do one of the following:

- Connect a printer device to a file service.
- Connect a file drive to a printer service.

*User Action:* Connect printer devices to printer services. Connect file drives to file services.

**Error reading from "filename"**

*Explanation:* An error occurred while the system was reading from the specified file.

*User Action:* Check for file errors and retry the print operation. Check for file access and file corruption errors.

**Error reading virtual disk. Try again.**

*Explanation:* LAD reported that an error occurred when a program tried to read the virtual disk.

*User Action:* Retry the operation.

**Error reinitializing LAST**
**Hit any key to attempt local boot**

> *Explanation:* An error occurred during remote boot while LAST was being initialized.

> *User Action:* Make sure the node name in the DECPARM.DAT file is correct. It may be necessary to recreate the DECPARM.DAT file.

**Error writing to 'filename'**

> *Explanation:* An error occurred while a program was trying to write to the specified file or device.

> *User Action:* Check the remote computer and retry the command.

**File not found "filename"**

> *Explanation:* You specified a file that does not exist.

> *User Action:* Reenter the command and specify a file that exists.

**File protection error opening 'filename'**

> *Explanation:* You ran the NET ATTRIB command, but one of the files has the wrong protection.

> *User Action:* If you used wildcards, the NET ATTRIB command continues. If you specified a file name, the NET ATTRIB command exits.

**Function not supported**

> *Explanation:* You specified one of the special device names (*:, ?:) with a function that is not supported. For example, USE ?: /DISCONNECT.

> *User Action:* You can only use the ambiguous device name to make connections.

**Function requires a user name**

> *Explanation:* You tried to connect to a VMS directory without specifying a user name.

> *User Action:* Because of security, you must specify a user name.

**General failure error**

*Explanation:* This message can be displayed for a variety of reasons. If the error occurs on a drive with a file server connection, the error may signal a problem with the VMS file service, such as a dismounted and offline disk.

*User Action:* This error usually requires a knowledgeable programmer to fix the problem.

**General failure error writing device**

*Explanation:* This message is displayed if you try to print a file on a logical device for which you specified incorrect print qualifiers.

*User Action:* Reissue the NET PRINT LPTn /SET command to correct or remove the incorrect print qualifiers. If you used the /CHARACTERISTICS= qualifier, reenter the command and either omit, or correct the incorrect qualifier.

**Hardware error on server**

*Explanation:* When you ran the NET ATTRIB command or the NET PASSWORD command, the server reported a hardware error.

*User Action:* Contact your system administrator.

**Header color argument incorrect**

*Explanation:* You entered an incorrect value for the Receiver's /H qualifier.

*User Action:* Reenter the RCV command and specify two correct arguments for the /H qualifier. For more information, see Chapter 7.

**Help files not found**

*Explanation:* The Help files are not in the DECNET directory.

*User Action:* Before you can use Help, you must locate the HELP.HLM file. It should be located in the \HELP subdirectory. Once you locate this file, you can specify the correct directory and use Help.

**Identifier too long**

*Explanation:* You ran the NET ATTRIB command and specified identifiers that were too long.

*User Action:* Reenter the command and specify valid identifiers for the NET ATTRIB command.

**Incompatible version of LAT**

*Explanation:* You tried to use an earlier version of LAT with LATCP.

*User Action:* Use the version of LAT supplied with your PCSA Version 3.0 software. Reenter the command.

**Incomplete request**

*Explanation:* You did not specify enough information on the command line for the USE command to interpret it.

*User Action:* For complete information about the command line and required information for requests, see Chapter 2, Managing Network Connections with the USE Utility.

**Incorrect number of operands**

*Explanation:* There is no keyword specified in the NET command.

*User Action:* Use the NET HELP command to check the command format.

**Insufficient disk space**

*Explanation:* Either of the following occurred:

- There is not enough disk space to complete the operation.
- The virtual disk is full.

*User Action:* Delete some files, get a new diskette, or create the file on another partition.

If you are running SETUP and this message is displayed, delete some files from your destination disk and run SETUP again. SETUP requires approximately 446,700 bytes on the destination disk to run successfully.

**Insufficient information**

*Explanation:* You have not specified enough information to perform the command.

*User Action:* Retry the command and specify all required information.

**Insufficient memory**

*Explanation:* There is not enough memory to run the specified command.

*User Action:* Free up some memory by stopping some terminate-and-stay-resident programs. Retry the command.

**Insufficient memory (LATCP)**

*Explanation:* You specified the LATCP ADD, DELETE, or one of the SHOW commands.

*User Action:* Because these commands use temporary buffers, you must have enough space for these buffers.

**Insufficient network resources. Try again.**

*Explanation:* The network is currently handling the maximum of parallel processes.

*User Action:* Disconnect any unused drives. Wait for a short time, then resend your request.

**Insufficient privileges**

*Explanation:* You tried to delete a print job whose user name does not match the user name of the connection.

*User Action:* Reconnect with the appropriate user name.

**Insufficient space for the requested module.**

*Explanation:* The allocated EMS memory is not big enough to load the specified module.

*User Action:* Check parameters specified on components loaded in EMS.

**Invalid address**

*Explanation:* You specified the LATCP ADD or DELETE command and entered an invalid DECnet or Ethernet address.

*User Action:* Reenter the command with a valid address.

**Invalid date received from node 'nodename'**

*Explanation:* An invalid time was received from the node 'nodename'.

*User Action:* Retry the NET TIME command.

**Invalid device**

*Explanation:* You specified a device outside the permitted range.

*User Action:* If you specified a drive letter other than Z in the LASTDRIVE= command in the CONFIG.SYS file, make sure you specify a drive letter that precedes the limit you specified in the LASTDRIVE= command.

**Invalid device name**

*Explanation:* You used incorrect characters in the device name.

*User Action:* For a drive, specify one letter followed by a colon ( : ), such as D:. A logical device name for a printer can be LPT1:, LPT2:, or LPT3:.

**Invalid device "string"**

*Explanation:* You specified an improperly formed device name. For example, FOO:, or AB:.

*User Action:* Check the device name and reenter the command. For complete information about device names, see Chapter 2, Managing Network Connections with the USE Utility.

**Invalid drive**

*Explanation:* Either of the following occurred:

- The drive you specified for a virtual disk is not in the range of letters allowed for virtual disks.

- You tried to mount or dismount a drive that is not a virtual disk.

*User Action:* Either of the following:

- Use the USE command to display the drives available for a virtual disk. Make sure you specify one of the drive letters displayed.

- Retry the command and specify a drive that is connected to a virtual disk.

**Invalid file specification**

*Explanation:* You specified an invalid file specification with the NET ATTRIB command.

*User Action:* Reenter the command with a valid file specification. Make sure no other directory exists with the same name. Check the directory from a VMS account for any inconsistencies.

### Invalid Identifier

*Explanation:* The ACL identifier you specified does not exist.

*User Action:* Either of the following:

- Use the NET ATTRIB command to set the ACL for the file.

- Use the ACL editor to determine whether the identifier exists.

- Reenter the command and make sure you specify only valid identifiers.

### Invalid new password

*Explanation:* The new password you specified was invalid.

*User Action:* Reenter the NET PASSWORD command and specify a valid password of six characters or more.

### Invalid node name

*Explanation:* Any of the following occurred:

- You tried to connect to a server that did not have an entry in the DECNODE.DAT file.

- You tried to connect to a virtual disk but did not specify the /V qualifier.

- You used incorrect syntax for a node name.

*User Action:* Do any or all of the following:

- Run the NET LIST command to display the node names in the DECNODE.DAT file. Run the NET DEFINE command to add a node name to the DECNODE.DAT file.

- When connecting to a virtual disk, specify the /V qualifier.

- The node name must be preceded by two backslashes. The node name must be six characters or less. You cannot use special characters in a node name. The following is an example of a valid node name:

```
\\REFLEX
```

The following are examples of invalid node names:

```
\\REFLEXIVE
REFLEX
\\REF*
```

**Invalid node name "string"**

*Explanation:* You specified an improperly formed node name. For example, \ BUBBLE

*User Action:* Check the node name and reenter the command. For complete information about node names, see Chapter 2, Managing Network Connections with the USE Utility.

**Invalid password**

*Explanation:* The password you entered was valid, but something else was incorrect with that password. For example, you can enter valid characters, but too few or too many characters.

*User Action:* Reenter the NET PASSWORD command and make sure you specify a password of at least six characters. Do not use special characters in the password.

**Invalid protection code**

*Explanation:* The protection you specified is incorrect.

*User Action:* Specify a protection of the format:

```
(S:RWED,O:RWED,G:RWED,W:RWED)
```

**Invalid protocol**

*Explanation:* NETBIOS, session, or virtual disk detected mixed protocols.

*User Action:* Contact your system administrator.

**Invalid protocol negotiated from node 'nodename'**

*Explanation:* The remote node you specified could not communicate with your node.

*User Action:* Retry the NET TIME command and specify another remote node.

**Invalid qualifier "/string"**

*Explanation:* You specified an invalid qualifier. A valid qualifier for the USE command must be preceded by a backslash.

*User Action:* Reenter the command and specify a valid qualifier that is preceded by a backslash.

**Invalid service name**

*Explanation:* You used an invalid service or print queue name.

*User Action:* Reenter the service name. Do not use special characters.

**Invalid service name "string"**

*Explanation:* You specified an improperly formed service name. For example, you may have forgotten to precede the service name with a backslash.

*User Action:* Check the service name and reenter the command. For complete information about service names, see Chapter 2, Managing Network Connections with the USE Utility.

**Invalid service or password**

*Explanation:* You specified either of the following:

• A service that is not offered.

• An invalid password for an offered service.

*User Action:* Make sure the service is offered. If it is, make sure you enter a valid password.

**Invalid session/netbios**

*Explanation:* Either of the following occurred:

• You have an out-of-date session/NETBIOS.

• You have another manufacturer's session/NETBIOS.

*User Action:* You must use the current DIGITAL session/NETBIOS.

**Invalid time received from node 'nodename'**

*Explanation:* An invalid time was received from the node 'nodename'.

*User Action:* Retry the NET TIME command.

**Invalid username**

*Explanation:* You used an invalid user name.

*User Action:* Reenter the user name. Do not use special characters.

**Invalid user name "string"**

*Explanation:* You specified an improperly formed user name. For example, you may have forgotten to precede the user name with a percent sign.

*User Action:* Check the user name and reenter the command. For complete information about user names, see Chapter 2, Managing Network Connections with the USE Utility.

**LAD is not installed**

*Explanation:* You tried a virtual disk function but LAD has not been started.

*User Action:* Do all of the following:

- Make sure STARTNET.BAT has been executed.

- Make sure LADDRV.SYS is in your CONFIG.SYS file.

- Use the USE command with the /STATUS qualifier to determine the current status of the network.

**LAST is not installed**

*Explanation:* You tried a virtual disk function but LAST has not been started.

*User Action:* Do all of the following:

- Make sure STARTNET.BAT has been executed.

- Use the USE command with the /STATUS qualifier to determine the current status of the network.

**LAT.EXE has an invalid file format**

*Explanation:* You specified the LATCP ADD command and either tried to load or unload LAT.EXE.

*User Action:* LAT.EXE could be corrupted. Obtain another copy of LAT.EXE and reenter your command.

**LAT is not installed**

*Explanation:* You specified one of the LATCP SHOW commands, but LAT.EXE is not loaded. The LATCP SHOW commands require LAT.EXE to be loaded first.

*User Action:* Load LAT.EXE and reenter your SHOW command

**Length of "string" too long**

*Explanation:* You specified a parameter on the USE command line that is too long.

*User Action:* Reenter the command and specify parameters of the correct length. For more information, see Chapter 2, Managing Network Connections with the USE Utility.

**Local Area Disk (LAD) not started**

*Explanation:* There is no LADDRV.SYS, or LAD has not been started.

*User Action:* Do one of the following:

- Obtain a copy of the current LADDRV.SYS file and add a DEVICE=LADDRV.SYS line to your CONFIG.SYS file.

- Start the current LAD/LAST software or run STARTNET.BAT.

**Local session table full**

*Explanation:* The volatile database for node names is full.

*User Action:* Either wait until a session is closed or disconnect one of your drives from the server. You can use the SESSION \MSN command to increase the size of the local session table. For more information about the SESSION command, see Chapter 8, Commands for Starting the PCSA Network.

**Maximum connections exceeded**

*Explanation:* Either of the following occurred:

- Someone is already connected to a READ/WRITE disk service.

- Too many users are trying to access the same service.

*User Action:* Either of the following:

- Do not try to access a READ/WRITE virtual disk when someone else is already accessing it.

- Ask your system administrator to increase the number of connections permitted to the disk server or file server. Use the NET MOUNT or NET MODIFY command to limit the connections to a virtual disk. If you receive this message when attempting to do a remote boot, ask another user to disconnect from the same service.

**Maximum connections to "string" exceeded**

*Explanation:* You tried to connect to a service, but no more connections are allowed.

*User Action:* See your system administrator.

**Message color argument incorrect**

*Explanation:* You entered an incorrect value for the Receiver's /M qualifier.

*User Action:* Reenter the RCV command and specify two correct arguments for the /M qualifier. For more information, see Chapter 7.

**Missing required item**

*Explanation:* You did not specify enough information on the USE command line for your request.

*User Action:* For complete information about request types, see Chapter 2, Managing Network Connections with the USE Utility.

**MS-NET not started**

*Explanation:* Session or NETBIOS is not in memory.

*User Action:* Run STARTNET.BAT to load session and NETBIOS into memory.

**Name conflict detected**

*Explanation:* Session or NETBIOS has detected a name conflict.

*User Action:* Make sure there are not two workstations running with the same node name or node number.

**Name conflict error in the network**

*Explanation:* You used a DECnet name that is currently being used by another workstation on the network.

*User Action:* Ask your system administrator to change your DECnet name to something unique.

**Name not found or did not answer**

*Explanation:* You tried to connect to a server that is not defined at your local workstation, or the server did not respond.

*User Action:* Use NCP or the NET DEFINE command to define the node name and node address.

**NET 801:  Remote computer not listening**

*Explanation:* You tried to do any of the following:

* Access a node that is not running a server.

* Use a network device that someone else is using through a PERMIT operation.

* Access a computer that is busy servicing other requests.

* Use a network device on a server that has no sessions available.

*User Action:* Retry the command or operation. If this message is displayed again, the server probably has no sessions remaining to service your requests.

Make sure the server is running on the remote computer.

**NET 803:  Network path not found**

*Explanation:* The remote node is unknown or unreachable.

*User Action:* Use the NET LIST command to get a list of node names. If the node is defined, then check if the node is defined as MS-NET. The node must be defined as MS-NET. If it is not, use the NET DEFINE command and specify that the node is MS-NET.

If the node is defined as an MS-NET node, make sure DECnet is running on the server.

Look in the file SYS$SYSTEM:[DECNET]NETSERVER.LOG if the node is defined. Make sure that the default DECNET account is set up properly and that the file DNLOGIN.COM is present. If the problem persists, contact your system administrator.

**NET 804:  Network busy**

*Explanation:* The data link or transport cannot send your message on the 3Com, DEPCA, or INTERLAN NI 5010 Ethernet controller. Your board might not be properly configured because of the IRQ conflicts.

*User Action:* Make sure there are no IRQ conflicts.

## NET 805: Network device no longer exists

*Explanation:* The device you tried to access is no longer available. This message is displayed for any of the following reasons:

- You explicitly tried to access the device.

- You started a program and the invalid drive existed in your PATH statement.

- The server node stopped unexpectedly and is no longer available.

- There was a duplicate DECnet node on the network.

*User Action:* Stop your request. Enter the following command to see a list the devices you are using:

```
USE
```

Enter the following command for all devices that have a status of ERROR:

```
USE drv: /D
```

Check with your system administrator about the availability of the device.

## NET 808: Incorrect response from network

*Explanation:* The remote server could not perform the task you wanted it to perform.

*User Action:* Make sure you are specifying the correct remote node for the command or task you are attempting. If not, specify the correct node.

## NET 809: Network request not supported

*Explanation:* The remote node could not perform the task you wanted it to perform.

*User Action:* Make sure you are specifying the correct remote computer for the command or task you are attempting. If not, specify the correct computer.

**NET 810: Unexpected network error**

*Explanation:* An unexpected network error occurred.

*User Action:* If you cannot use the network, try to stop your application. If you cannot stop the application, restart the MS-DOS operating system by pressing the Ctrl/Alt/Del keys. Restart the workstation network software. Connect to the network again. If this message is displayed again, contact your system administrator.

**NET 812: Print queue full**

*Explanation:* The print queue is full.

*User Action:* Send your request later. Make sure the printer is on line and operating.

**NET 813: Not enough space for print file**

*Explanation:* The server sharing the printer did not have enough disk space to store the file until it was printed.

*User Action:* Ensure the printer is operating and on line. Send your request later.

**NET 814: Print file was canceled**

*Explanation:* The print file you submitted to a network printer was canceled by the user at the server.

*User Action:* To stop the print operation, press the A key. Retry the print operation later.

**NET 815: Network name was deleted**

*Explanation:* An adapter name was deleted because of a name conflict.

*User Action:* Restart your workstation by pressing Ctrl/Alt/Del.

**NET 816: Access denied**

*Explanation:* Any of the following occurred:

- The password you specified was incorrect.
- The server did not allow your connection.
- The node you tried to access has been improperly defined.
- The workstation is not registered on the server.

*User Action:* Try one of the following:

- Make sure you entered the password correctly. If you did, the password may have changed. Contact your system administrator for the correct password.
- Make sure you are allowed to access this resource. Contact your system administrator about access privileges.
- Contact your system administrator to get the workstation registered.

**NET 817: Network device type incorrect**

*Explanation:* Any of the following occurred:

- The local device type was different from the workstation network device type.
- You tried to use a network disk or directory and used device LPT1 through LPT3 as a DOS name.
- You used a network printer and used device A through Z as a DOS device name.
- You specified an illegal print qualifier with the NET PRINT /SET command.

*User Action:* Try one of the following:

- Send the request using the correct device name. For example, use DOS device names A through Z to connect to network disks and directories, and DOS device names LPT1 through LPT3 to connect to network printers.
- Use the NET PRINT /SET command to modify or remove the illegal qualifier.

**NET 818: Network name not found**

*Explanation:* The network name you specified was incorrect.

*User Action:* Make sure you spelled the name correctly. If you did, the name is no longer on the network.

**NET 819: Network name limit exceeded**

*Explanation:* You tried to redirect too many devices.

*User Action:* Using the USE command, disconnect some of the network devices and directories to which you are currently connected. You can also increase the number of redirections by adding the /L:n qualifier to your REDIR command line. The default for n is four.

**NET 820: Network session limit exceeded**

*Explanation:* You exceeded the maximum number of logical links set in the DECnet driver.

*User Action:* Change the maximum number of logical links using the NCP DEFINE EXEC MAXIMUM LINKS command. The default for "n" is four. The value takes effect after you restart your workstation.

**NET 822: Print or disk redirection is paused**

*Explanation:* The printer or disk redirector was paused. Your request could not be performed at that time.

*User Action:* To continue print or disk redirection, enter:

`NET CONTINUE`

Send your request later.

**NET 825: Network data fault**

*Explanation:* You tried to write data to a network disk, hard disk, or key diskette that was full.

*User Action:* To stop the operation, press the A key.

**NETBIOS not installed**

*Explanation:* The client software is not yet installed.

*User Action:* Ask your system administrator to install the client software.

**Network already started**

*Explanation:* You tried to start the network after it was already started.

*User Action:* Continue to use the network. If you cannot continue using the network, restart your workstation by pressing the Ctrl/Alt/Del keys.

**Network connection failed**

*Explanation:* The network software failed.

*User Action:* Restart your workstation by pressing the Ctrl/Alt/Del keys.

**Network connection failed, node unreachable**

*Explanation:* The node to which you tried to connect is not reachable. The node may be not working at the present time.

*User Action:* Contact the system administrator to determine the problem and when you can connect.

**Network error**

*Explanation:* An unexpected network error occurred. Because of this error, your command cannot be completed.

*User Action:* Load the network before attempting an NCP operation.

**Network (MS-NET) not installed**

*Explanation:* Either of two things occurred:

- The install check for the network failed. You must have the appropriate hardware and software to run the network.

- You tried to use a network command without starting the network.

*User Action:* Make sure you have the appropriate hardware and software to run the network. Then enter:

STARTNET

Retry the command.

**Network not started**

*Explanation:* You tried to use the NET TIME command but the network was not started.

*User Action:* Start the network by entering:

STARTNET

**New password must be different from current password**

*Explanation:* You specified a new password that is identical to your old password.

*User Action:* Make sure you specify a new password that is different from your old password.

**No answer**

*Explanation:* The server did not respond.

*User Action:* Contact your system administrator.

**No available devices**

*Explanation:* You tried to make a connection using the ambiguous device type, but there are no available devices.

*User Action:* If you still want to make a connection, disconnect one of the device and connect it to the desired service.

**No entries in list**

*Explanation:* You have not connected to any services.

*User Action:* None.

**No remote adapter table**

*Explanation:* There is no remote adapter name table for session.

*User Action:* Edit your STARTNET.BAT file and search for the SESSION command line. Specify a value for the /REM: qualifier.

**Node name not found**

*Explanation:* You tried to connect to a server that is not defined at your local workstation.

*User Action:* Use NCP or the NET DEFINE command to define the node name and node address.

**Node name too long**

*Explanation:* You specified a node name longer than six characters.

*User Action:* Specify a node name of six characters or less.

**Non-specific error occurred**

*Explanation:* An error occurred, but it was not specific enough to generate another message.

*User Action:* Retry whatever operation you were attempting. If this error persists, think about what happened, and try to pinpoint what caused the error.

**No space in the remote adapter name table**

*Explanation:* For some reason, the pointer in the remote adapter name table could not be swapped.

*User Action:* Edit your STARTNET.BAT file to increase the value of the /REM parameter to the SESSION command.

**Not a virtual drive**

*Explanation:* You tried to connect a virtual disk to a drive that is not a virtual disk drive. The drive identifiers you can use for the virtual disk drives are assigned at system startup.

*User Action:* To display the letters you can use for the virtual disk drives, run the USE command. Then, reconnect to a drive valid for a virtual disk.

**Number argument incorrect**

*Explanation:* You entered an incorrect value for the Receiver's /N qualifier.

*User Action:* Reenter the RCV command and specify a correct argument for the /N qualifier. For more information, see Chapter 7.

**Out of environment space setting variable "string"**

*Explanation:* You tried to set an environment variable using the USE command with the /ENVIRON qualifier. However, there is not enough space to create the variable.

*User Action:* You must use the MS-DOS SET command to free some space. For more information about the MS-DOS SET command, see *MS-DOS Reference Manual.*

**Parameter too long**

*Explanation:* You specified a parameter that was too long.

*User Action:* Reenter the command and specify parameters of the correct length.

**Password too long**

*Explanation:* You specified a password that contained too many characters.

*User Action:* When connecting to a VAXmate server, specify a password of 16 characters or less. When connecting to a VMS server, specify a password of 31 characters or less. For remote boot, specify a password of 39 characters or less.

**Password verification failed**

*Explanation:* The new password and the verification you entered are not the same.

*User Action:* Retry the command and specify the same password for New password and for Verification.

**Print job not found**

*Explanation:* You specified a print job number that does not exist.

*User Action:* Reenter the command with the correct number.

**Process doesn't exist**

*Explanation:* A virtual circuit could not be made because the process does not exist.

*User Action:* Contact the system administrator.

**Redirector is not installed**

*Explanation:* You tried a file or printer service function but the redirector has not been started.

*User Action:* Do all of the following:

- Make sure STARTNET.BAT has been executed.

- Use the USE command with the /STATUS qualifier to determine the current status of the network.

**Remote adapter table full**

*Explanation:* Session's remote adapter name table is too small.

*User Action:* Edit your STARTNET.BAT file and search for the SESSION command line. Specify a larger value for the /REM: qualifier.

**Requested module already in EMS.**

*Explanation:* The specified module is already in EMS.

*User Action:* No user action is needed.

**Requested module COMPONENT initialization failure.**

*Explanation:* Either of the following occurred:

- The specified component is already in conventional memory.

- The component qualifiers are invalid.

*User Action:* Do either of the following:

- Make sure the component is not loaded anywhere else.

- Make sure the specified qualifiers are valid for the component.

**Requested module COMPONENT loaded successfully.**

*Explanation:* EMSLOAD successfully placed the specified component in EMS.

*User Action:* No user action is needed.

**Requested module does not exist.**

*Explanation:* EMSLOAD cannot find the component in the specified path.

*User Action:* At the DOS prompt, check your path by entering the following command:

PATH  `Return`

Make sure the specified module is in the path.

**Requested module not supported.**

*Explanation:* EMSLOAD does not support the specified module.

*User Action:* Do not attempt to load a module that EMSLOAD does not support.

**Requires MS-DOS version "n.n" or greater**

*Explanation:* You tried to run the USE command on an unsupported version of MS-DOS.

*User Action:* You must obtain the correct version of MS-DOS before you can run the USE command.

**Scheduler has not been installed.**

*Explanation:* You must install the scheduler before using EMSLOAD.

*User Action:* At the DOS prompt, install the scheduler and datalink by entering the following commands:

SCH  `Return`
DLL  `Return`

**Server not listening**

*Explanation:* The server to which you are trying to connect is not listening.

*User Action:* Contact the system administrator for the server.

**Server's network name is currently in use on another server**

*Explanation:* There are two or more servers with the same node name.

*User Action:* Contact your system administrator.

**Service is READ-ONLY**

*Explanation:* You tried to connect to a disk service as READ/WRITE, but the service was offered as READ-ONLY.

*User Action:* Either:

- Use the NET MOUNT or PCSA_MANAGER MOUNT DISK command to remount the service as READ and WRITE.

- Use the USE command and specify read-only access to connect to the virtual disk.

**Service "string" is read-only**

*Explanation:* You tried to connect to a virtual disk that is read-only. However, you specified read-write.

*User Action:* If you want to connect to the virtual disk, you must specify read-only.

**Service name cannot exceed 16 characters**

*Explanation:* You specified either the LATCP ADD or DELETE command and entered a service name that is longer than 16 characters.

*User Action:* Reenter the ADD or DELETE command and specify a service name that is no longer than 16 characters.

**Service name too long**

*Explanation:* You specified a service name that was too long.

*User Action:* Specify a service name up to 31 characters.

**Service not offered**

*Explanation:* You tried to connect to a service that may not be currently offered by any server.

*User Action:* Do any or all of the following:

- Try to reconnect to the service. Check that you have correctly spelled the service name.

- Use the NET DISK SERVICES command to display the disk services offered on the server.

- Check that the disk service is offered on the VMS disk server. At the VMS disk server, enter:

```
$ PCSA SHOW DISK SERVICES/SERVICE=servicename
```

The information displayed indicates whether the service is mounted. If the service displays as mounted, there may be a problem with the connection. To be sure that the local node can communicate with the server, do a datalink loopback test. For more information about the loopback test, see the *DECnet-DOS Network Management Guide*.

**Service "string" not offered**

*Explanation:* Either of the following occurred:

- You tried to connect to a service that is not currently offered.

- No server offering the service responded within the timeout period.

*User Action:* See your system administrator to determine whether the service is mounted.

**Session closed**

*Explanation:* One of the nodes closed the session.

*User Action:* Contact the system administrator to determine whether the server closed the session.

**Session ended abnormally**

*Explanation:* The remote node powered down or a session/NETBIOS command such as SEND or HANGUP timed out.

*User Action:* Contact the system administrator. Try connecting later.

**Session is not installed**

*Explanation:* You tried an operation on the network but session has not been started.

*User Action:* Do all of the following:

- Make sure STARTNET.BAT has been executed.

- Use the USE command with the /STATUS qualifier to determine the current status of the network.

**Session layer version 2 required**

*Explanation:* When the VAXmate server started, an invalid session was loaded.

*User Action:* The VAXmate server must use the Version 2 session to perform correctly.

**Session open rejected by host**

*Explanation:* The server rejected you attempt to connect. There could be a problem with your access control information (user name and password). There could also be a problem with your configuration in LOGIN.COM

*User Action:* Do all of the following:

- Verify that your user name and password are correct.

- Verify that LOGIN.COM contains the information you want it to contain.

**Syntax error**

*Explanation:* You entered a command that LATCP could not recognize.

*User Action:* Reenter your LATCP command, using the correct syntax. For more information about LATCP commands, enter:

```
LATCP> HELP command Return
```

**The preferred service already exists**

*Explanation:* You tried to add a preferred service that already exists.

*User Action:* No action necessary.

**The preferred service does not exist**

*Explanation:* You tried to delete a preferred service that does not exist.

*User Action:* No action necessary.

**The qualifier "string" requires a value**

*Explanation:* You used the USE command with the /EXCEPT qualifier but did not specify a value for /EXCEPT.

*User Action:* Reenter the command and specify a value for /EXCEPT.

**This version of scheduler does not support EMS.**

*Explanation:* The installed scheduler version does not support EMS.

*User Action:* Use a scheduler that supports EMS.

**Timed out**

*Explanation:* The server did not respond within the time limit.

*User Action:* Retry the command later.

**Too many outstanding session commands**

*Explanation:* There are too many outstanding commands for the server.

*User Action:* Try again later.

**Too many parameters**

*Explanation:* You entered a USE command line, but USE could not interpret it.

*User Action:* Reenter the command and specify the correct parameters in their correct form. For more information, see Chapter 2, Managing Network Connections with the USE Utility.

**Too many processes**

*Explanation:* The limit for processes has been exceeded.

*User Action:* Try connecting later.

**Too many qualifiers**

*Explanation:* You entered a USE command with so many qualifiers that USE could not save and interpret all of them.

*User Action:* Reenter the command and specify fewer qualifiers.

**Too many redirections**

*Explanation:* The value for the NCP maximum links is set too low.

*User Action:* At the DOS prompt, increase the value for the maximum links by entering:

```
NCP DEFINE EXEC MAX LINKS n
```

Where "n" is the new value for maximum links. Because this command changes the permanent database, and not the volatile database, you must restart your workstation before the new value takes effect. To restart your workstation, press Ctrl/Alt/Del.

**Too many users**

*Explanation:* The limit for users has been exceeded.

*User Action:* Try later.

**Type argument incorrect**

*Explanation:* You entered an incorrect value for the Receiver's /T qualifier.

*User Action:* Reenter the RCV command and specify a correct argument for the /T qualifier. For more information, see Chapter 7.

**Unable to close connection with remote node**

*Explanation:* You issued the NET TIME command and the remote node serviced your request, but your local node could not close the connection.

*User Action:* Contact your system administrator.

**Unable to connect to node or service "name"**

*Explanation:* One of the following is true:

- The specified remote node does not respond.

- The service or print queue does not exist.

*User Action:* Reenter the command with the name of an existing node, service, or print queue.

**Unable to contact remote node 'nodename'**

*Explanation:* You issued the NET TIME command but the remote node was not listening.

*User Action:* Retry the NET TIME command and specify another node name.

**Unable to delete print job**

*Explanation:* One of the following occurred:

- The server could not delete the specified job because the job has already started printing.

- An error occurred while the job was being printed.

*User Action:* Wait for the job to finish printing or contact your system administrator.

**Unable to find the file LAT.EXE**

*Explanation:* You specified either the LATCP ADD or DELETE command, but LATCP could not find LAT.EXE.

*User Action:* Make sure you path is correct for LAT.EXE file. Reenter your command.

**Unable to restore remote adapter table entry**

*Explanation:* The remote adapter table entry could not be restored.

*User Action:* Do the following:

1. Increase the size of the remote adapter table.

2. Restart your workstation by pressing Ctrl/Alt/Del and start over.

**Unable to send command to remote node 'nodename'**

*Explanation:* You issued the NET TIME command but your local node could not talk to the network.

*User Action:* Contact your system administrator.

**Unexpected Error: Class="n" Error="n"**

*Explanation:* An error occurred that the USE command cannot handle.

*User Action:* Contact your support people. Indicate what operation you were performing, and the error class and number displayed on the screen.

**Unexpected error in adding local name**

*Explanation:* The redirector was unable to add its local adapter name to session's table. An unusual network error occurred.

*User Action:* Make sure you installed the software correctly. Make sure also that the hardware is working correctly.

**Unexpected network error 'errornumber'**

*Explanation:* A network command returned an unexpected error. The parentheses in the message contain the MS-DOS operating system extended error code.

*User Action:* Contact your system administrator.

**Unrecognized character "c"**

*Explanation:* You specified a parameter on the USE command line that contains an unrecognized and illegal character. For example, instead of LPT1:, you entered LP_1:.

*User Action:* Check the command line for unrecognized and illegal characters. Reenter the command. For more information, see Chapter 2, Managing Network Connections with the USE Utility.

**Unrecognized command**

*Explanation:* The remote boot program did not recognize the command.

*User Action:* Make sure you entered the command correctly. Try again.

**Unsupported file server command**

*Explanation:* One of the following occurred:

- You tried to use the NET ATTRIB on a VAXmate server.

- You tried to use the NET PASSWORD command on a VAXmate server.

- You tried to use the NET PRINT command on a VAXmate server.

- You tried to use the specified command on an out-of-date VMS file server.

*User Action:* Either of the following:

- Do not attempt to use these commands on a VAXmate server.

- Contact your system administrator to update your VMS file server.

**Unsupported MS-DOS version**

*Explanation:* You tried to install a network with an inappropriate version of the MS-DOS operating system.

*User Action:* Use the MS-DOS Version 3.3 operating system. Contact your system administrator to obtain the correct version of the MS-DOS operating system.

**Username too long**

*Explanation:* You specified a user name that was too long.

*User Action:* Specify a user name of up to 31 characters.

**Warning: DEPCA firmware version not supported by REMOTE BOOT**

*Explanation:* Your DEPCA ROM version is not supported.

*User Action:* The remote boot may still work, but you should upgrade your ROMs. If your workstation hangs and does not respond, you must upgrade your ROMs before you can use this DEPCA.

**Warning: Service table full Some sessions may be missing**
**Press any key to continue**

*Explanation:* The service table is full. There are probably services that did not get stored in the service table.

*User Action:* Use the LAT command with the /D:size qualifier to increase the number of services you can have in the network terminal services directory. The size you specify on the /D: qualifier is added to the default size of 10. For example, to create a network services directory that can contain up to 15 services, the qualifier is /D:5. Each additional entry over the default consumes an extra 47 bytes of memory.

**NOTE**
To modify the directory size, you must unload and then load LAT with the new value for the /D:size qualifier.

# B

# MS-DOS and VMS File Compatibility

The MS-DOS operating system and the VMS operating system have different file systems. While both have directory structures rooted on disk drives, their file-naming syntax is different. The following sections contain information about:

- Naming conventions and VMS directory names

- Creating files using text editors

- Special characters in file names

- Copying binary files between MS-DOS and VMS

- Using MS-DOS applications with VMS-created files

- Read-only directories

## Naming Conventions and VMS Directory Names

When using the VMS operating system, you cannot create a file with the .DIR extension if a subdirectory with the same name already exists. For example, if the directory NAME exists, you cannot create a file called NAME.DIR.

## Creating Files Using Text Editors

Certain MS-DOS text editors end a text file with Ctrl/Z as a delimiter. If you create such a file on your workstation with an MS-DOS text editor and want to use the file as a .COM file in the VMS environment, you must first insert a $ EXIT as the last line of the .COM file, or edit the file on the VMS system and remove the Ctrl/Z. For example, using EDT to edit the text file TEST.TXT, which was created using an MS-DOS text editor, do the following.

1.  Using EDT, edit TEST.TXT, by entering:

    `$ EDT TEST.TXT` `Return`

2.  Go to the bottom of the file by pressing the Gold key and then the 4 key.

3.  Delete the last line of the file.

4.  Press Ctrl/Z to exit EDT.

If you use a VMS text editor to create a file that is to be used later in the MS-DOS environment, use the /A qualifier to copy the file from the drive connected to the VMS server to any other drive. Copying the file with the /A qualifier removes any appended Ctrl/Z characters. Certain MS-DOS application programs end abnormally when they encounter a Ctrl/Z character. For example, to copy the text file TEST.TXT from drive M: to drive C:, enter:

`M:\> COPY /A TEST.TXT C:\*.*` `Return`

The MS-DOS COPY command copies all of TEST.TXT, except Ctrl/Z, to the root directory of drive C.

## Special Characters in File Names

When creating a subdirectory, do not specify more than nine special characters in the 11 characters (8-character MS-DOS file name; 3-character MS-DOS file extension) you can use in an MS-DOS file name and file extension. Special characters are any valid MS-DOS characters other than A-Z, 0-9, $, and _ . Table B–1 lists the special characters you can use in an MS-DOS file name and file extension.

**Table B–1   Special Character for File Names**

| a-z | & | # | % |
|-----|---|---|---|
| '   | ( | ) | – |
| @   | ^ | { | } |
| ~   | ' | ! |   |

## Copying Binary Files Between MS-DOS and VMS Directories

You can copy an MS-DOS binary file, such as a LOTUS 1-2-3 file, to a VMS directory using the MS-DOS COPY command. Before you can use this command, however, you must be connected to the file service.

If you cannot connect to the file service, you can copy MS-DOS files to your VMS directory using the NFT COPY command.

## Using MS-DOS Applications with VMS-Created Files

Some DOS applications (for example, EDLIN) do not work with a file created by a VMS process because the VMS server does not allow write access to those files. The applications allow write access to VMS files with the stream record format, but support only read access to files with any other record format. To determine the record format of a file created by a VMS process, use the DIR/FULL command at the VMS operating system prompt.

For example:

```
$ DIR/FULL filename  Return

Directory DSK:[ENG]

FILENAME.EXT                    FILE ID:  (1111,11111,1)
Size:          12/12            Owner:    [1AB,SMITH]
Created:  1-JAN-1989  13:00:00.0
Revised:  1-JAN-1989  13:00:32.2 (2)
Expires:   <None specified>
Backup:   3-MAR-1989 16:00:45.0
File organization:  Sequential
File attributes:    Allocation: 12, Extend: 0 Global buffer count: 0
                    No version limit
Record format:      Variable length, maximum 80 bytes
Record attributes:  Carriage return carriage control
RMS attributes:     None
Journaling enabled: None
File protection:    System:RWED, Owner:RWED, Group;RWE, World: RE
Access Cntrl List:  None

Total of 1 file, 12/12 blocks
$
```

Table B–2 describes the VMS server support for MS-DOS access to VMS files.

**Table B–2   MS-DOS Access to VMS Files**

| VMS File Record Format | MS-DOS Access |
|---|---|
| Stream | Open/Close<br>Create<br>Read<br>Write<br>Delete |
| 512-byte, fixed-length record | Open/Close<br>Read<br>Write<br>Create<br>Delete |
| Sequential variable record | Open/Close<br>Read (sequential only)<br>Delete |
| Relative record | Open/Close<br>Read (sequential only)<br>Delete |
| Indexed record | Open/Close<br>Read (sequential only)<br>Delete |

The VMS server supports only read access to ordinary RMS record files (nonstream files).

Use 512-byte, fixed-length records for WPS support. For more information about creating this service, see the ADD SERVICE command in the *Server Administration with Commands*.

To convert a nonstream file to a stream file, make a copy of the file using the MS-DOS COPY command. For example, to convert the nonstream file A.DAT to a stream file named B.DAT, at the MS-DOS operating system prompt, enter:

```
A:\> COPY M:A.DAT M:B.DAT  Return
```

## Read-Only Directories

Directories marked as read-only on the VAXmate server are ordinary
MS-DOS directories. You can create files in the directory and remove
directories when they are empty. Directories marked as read-only on the
VMS server cannot be deleted by an MS-DOS process. Also, you cannot
delete files from or create files in that directory.

# C
# NET START Commands

This appendix contains information about the following NET START commands:

- **NET START LAD**
- **NET START LAT**
- **NET START RDR**
- **NET START RDR802**

These commands allow you to start virtual disk services, terminal services, and file and printer services as you need them. For example, assume you rarely connect to virtual disk services. You can remove the LAD command line from the STARTNET.BAT file, which saves memory. If you later decide you need to connect to a virtual disk service, you can start the software by entering the NET START LAD command at the DOS prompt.

# NET START LAD

Use the NET START LAD command to start the client software on the virtual disk. To use this client software, a workstation in a LAN must connect to a VMS disk server. The NET START LAD command starts the LAST, the transport layer for the virtual disk, and the 13H emulator.

Before using this command, make sure the device driver, LADDRV.SYS, is loaded with the CONFIG.SYS file. The CONFIG.SYS file should contain the command:

```
DEVICE = LADDRV.SYS
```

## Format

NET START LAD
$$
\begin{bmatrix}
[/C:D \mid E] \\
[/G:n] \\
[/IRQ=n] \\
[/M:D \mid E] \\
[/N:name] \\
[/R:n] \\
[/W:n]
\end{bmatrix}
$$

## Qualifiers

### /C:D | E
D turns off and E turns on checksumming for LAST, the transport layer for the virtual disk. The default is checksumming disabled, D.

### /G:n
Is the group code number for LAST. The range is 0 to 1023; the default is zero.

### /IRQ:n
Is the interrupt request line for your Ethernet controller. The default is 5. For more information about the setting required, see the manufacturer's documentation for the controller.

## /M:D | E

Use D to turn off and E to turn on multicast traffic. With multicast traffic enabled, the workstation periodically receives messages from other nodes about services (such as LAT services) available on the network. For information on controlling multicast traffic, see *Installation and Configuration Guide: DECnet PCSA Client for DOS (VMS Media)*. The default is multicast traffic enabled.

## /N:name

Is a DECnet node name. If you use the NET START LAD command after a NET START RDR command is run, you can omit the /N qualifier. When NET START RDR is run, the client software uses the DECnet node name of your workstation.

## /R:n

Specifies the quota of read buffers for LAD in a single transaction. For single-buffered Ethernet controllers, such as the 3Com and INTERLAN NI 5010 Ethernet controller boards, specify 1. The default value is 4. You must specify a value between 1 and 15.

## /W:n

Specifies the quota of buffers that LAD can write in a single transaction. You must specify a value from 1 and 15. The default is four.

# NET START LAT

Use the NET START LAT command to start the Local Area Transport software, which lets you use terminal communications over the LAN using the LAT protocol.

## Format

NET START LAT $\begin{bmatrix} /D:size] \\ [/G:group] \\ [/IRQ:N] \\ [/N] \\ [/R:retransmission] \end{bmatrix}$

## Qualifiers

### /D:n
Is the size of the network terminal services directory to which you can connect. The default is 10. For n, you can specify a number from 10 through 10 and 1054. The size you specify in the /D qualifier is added to the default size of 10. For example, if you specify /D:4, the size will be 14. Each additional entry over the default takes an extra 47 bytes of memory.

### /G:group
Is a number or a series of numbers (0 to 255), that represent LAT group codes. LAT group codes identify the subsets of the VAX computers to which you can connect. The default is that you can connect to all LAT group codes. For a list of the LAT group codes, see your system administrator.

If you specify more than one LAT group code, separate the numbers with commas.

### /IRQ:n
Is the interrupt request line for your Ethernet controller. The default is 5. For more information about the setting required, see the manufacturer's documentation for the controller.

### /N

Turns off multicast traffic when LAT is started. With multicast traffic disabled, the workstation does not receive broadcast messages of LAT services available on the LAN. For information on controlling multicast traffic, see *Installation and Configuration Guide: DECnet PCSA Client for DOS (VMS Media)*. The default is multicast traffic enabled.

### /R:retransmission

Is the maximum number of retransmissions permitted for a LAT data packet before the transmission stops. The default is 8. Retransmissions can range from 4 to 255.

## Example

`A:\> NET START LAT /G:0,2,15,30`

This example enables group codes 0, 2, 15, 30.

## NET START RDR

The NET START RDR command starts DECnet and the redirector. If you copied the MSNET.ETH file, then DECNET for the Ethernet network is loaded.

This command also loads the session support chosen during configuration. If you are running applications that require support for NETBIOS adapter names or NETBIOS datagram services, then use the NETBIOS session interface.

## Format

NET START RDR
$$\begin{bmatrix} [/CMD:n] \\ [/I2A:Y \mid N] \\ [/IRQ:n] \\ [/LAN:n] \\ [/M:D] \\ [/MSN:n] \\ [/NAM:Y \mid N] \\ [/NBS:n] \\ [/Pn:X] \\ [/REM:n] \\ [/S:n] \end{bmatrix}$$

## Qualifiers

*/CMD:n*
Is the maximum number of simultaneous commands allowed in a session queue. The default value is two times the maximum number of active logical links. For more information on the maximum number of logical links, see the NCP DEFINE EXECUTOR command in the *DECnet-DOS Network Management Guide*. The value you specify can range from 2 to 32.

*/I2A:Y | N*
Y means the INT 2AH call is serviced; N means the INT 2AH call is not serviced. The default is Y. Set to N if you are using an alternate INT 2A interface. Then session only services INT 5C calls.

### /IRQ:n

Is the interrupt request line for your Ethernet controller board. The default is 5. For more information about the setting required, see the manufacturer's documentation for the controller.

### /LAN:n

Is the LANA number of the adapter card that NETBIOS emulates. The value n is either zero (0) or one (1). The default value is 0. Set this value to 1 if you already have a PC Network adapter card installed.

### /M:D

Turns off multicast traffic. With multicast traffic enabled, the workstation periodically receives messages from other nodes about services (such as LAT services) available on the network. For information on controlling multicast traffic, see *Installation and Configuration Guide: DECnet PCSA Client for DOS (VMS Media)*. The default is multicast traffic enabled.

### /MSN:n

Is the number of entries in the table for servers in session's volatile database. Values can range from 0 to 2000. The default is the number of MS-NET nodes in the DECnet node database or 12, whichever is larger. To determine the number of MS-NET nodes, use the NET LIST command. NET LIST displays node addresses, node names, active links, and whether the node is an MS-NET (M) or LAT (L) server. Count each node with an "M" after its name.

### /NAM:Y | N

Y means the local adapter names for the server and REDIR are added to the volatile local adapter database. The default is N.

### /NBS:n

Is the size of the largest message session supports. The default value is 4096. The value can range from 512 bytes to 64 Kbytes.

### /Pn:x

For n, specify the number (1, 2, 3) of the printer. The default value for n is 1. For x, specify the size in bytes of the printer buffer. The default value for x is 128. You can specify a number up to 2048 for x.

## /REM:n

Is the number of entries in the table for the remote adapter names in session's volatile database. The value can range from 0 to 200. The default is 1. To use the network commands in this chapter, the value should be one greater than the number of remote adapter names. To determine the number of entries, use the NCP LIST KNOWN REMOTE-ADAPTER command. For more information, see *DECnet-DOS Network Management Guide*.

## /S:n

Is the number of servers to which the redirector can connect. The default is 4.

# Example

```
A:\> NET START RDR

    Network kernel version 2.00
    Datalink - Version 2.00
    DECnet DNP Version T2.00
    DECnet Node Name 'YELLOW' (9.999)
    DECnet started
    MS-NET/DECnet Session Version 2.00

    MS-NET Redirector 2.00
    Command completed successfully.
```

This example starts the network.

If the network initialization does not complete successfully, a message is displayed indicating that a problem occurred.

# NET START RDR802

The NET START RDR802 command starts the 802.3 datalink layer.

## Format

NET START RDR802
$$\begin{bmatrix} \text{[/CMD:n]} \\ \text{[/I2A:Y | N]} \\ \text{[/IRQ:n]} \\ \text{[/LAN:n]} \\ \text{[/M:D]} \\ \text{[/MSN:n]} \\ \text{[/NAM:Y | N]} \\ \text{[/NBS:n]} \\ \text{[/Pn:x]} \\ \text{[/REM:n]} \\ \text{[/S:n]} \end{bmatrix}$$

## Qualifiers

### /CMD:n
Is the maximum number of simultaneous commands allowed in a session queue. The default value is two times the maximum number of active logical links. For more information on the maximum number of logical links, see the NCP DEFINE EXECUTOR command in the *DECnet-DOS Network Management Guide*. The value you specify can range from 2 to 32.

### /I2A:Y | N
Y means the INT 2AH call is serviced; N means the INT 2AH call is not serviced. The default is Y. Set to N if you are using an alternate INT 2A interface. Then session services only INT 5C calls.

### /IRQ:n
Is the interrupt request line for your Ethernet controller. The default is 5. For more information about the setting required, see the manufacturer's documentation for the controller.

## /LAN:n

Is the LANA number of the adapter card that NETBIOS emulates. The value n is either zero ( 0 ) or one ( 1 ). The default value is 0. Set this value to 1 if you already have a PC Network adapter card installed.

## /M:D

Turns off multicast traffic. With multicast traffic enabled, the workstation periodically receives messages from other nodes about services (such as LAT services) available on the network. For information on controlling multicast traffic, see *Installation and Configuration Guide: DECnet PCSA Client for DOS (VMS Media)*. The default is multicast traffic enabled.

## /MSN:n

Is the number of entries in the table for servers in session's volatile database. Values can range from 0 to 2000. The default is the number of MS-NET nodes in the DECnet node database or 12, whichever is larger. To determine the number of MS-NET nodes, use the NET LIST command. NET LIST displays node addresses, node names, active links, and whether the node is an MS-NET ( M ) or LAT ( L ) server. Count each node with an "M" after its name.

## /NAM:Y | N

Y means the local adapter names are added for REDIR and the server to the volatile local adapter name database. The default is N.

## /NBS:n

Is the size of the largest message that session supports. The default value is 4096. The value can range from 512 to 64 Kbytes.

## /Pn:x

For n, specify the number (1, 2, 3) of the printer. The default value for n is 1. For x, specify the size in bytes of the printer buffer. The default value for x is 128. You can specify a number up to 2048 for x.

## /REM:n

Is the number of entries in the table for the remote adapter names in session's volatile database. The value can range from 0 to 200. The default is 1. To use the network commands in this chapter, the value should be one greater than the number of remote adapter names. To determine the number of entries, use the NCP LIST KNOWN REMOTE-ADAPTER command. For more information, see *DECnet-DOS Network Management Guide.*

## /S:n

Is the number of servers to which the redirector can connect. The default is 4.

# Index

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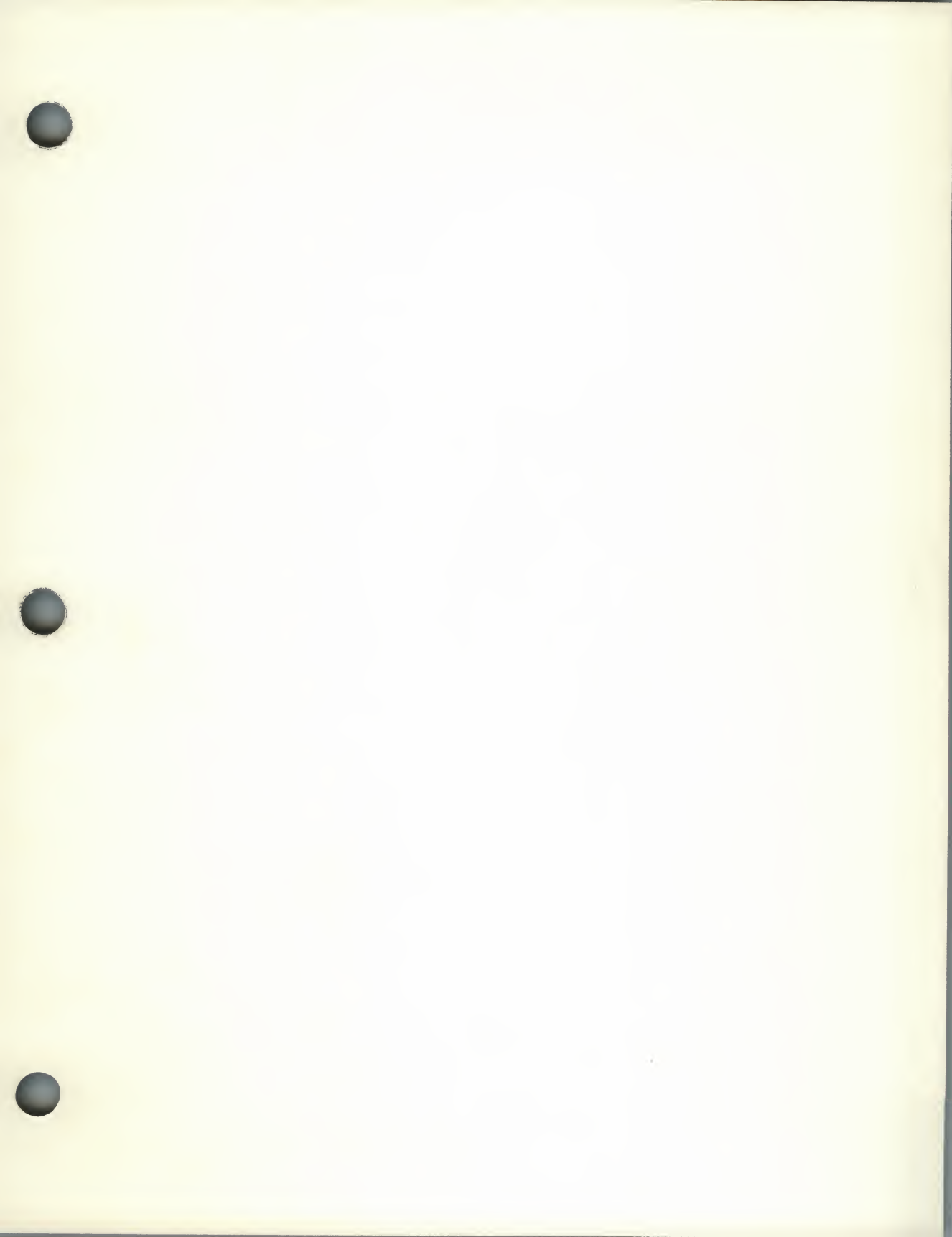
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